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359053



**PRELIMINARY ASSESSMENT/
VISUAL SITE INSPECTION**

**BRUNSWICK, INC.
MERCURY MARINE DIVISION
FOND DU LAC, WISCONSIN
WID 073 830 028**

FINAL REPORT

Prepared for

**U.S. ENVIRONMENTAL PROTECTION AGENCY
Office of Waste Programs Enforcement
Washington, DC 20460**

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EPA Region	:	5
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EXECUTIVE SUMMARY

PRC Environmental Management, Inc. (PRC), performed a preliminary assessment and visual site inspection (PA/VSI) to identify and assess the existence and likelihood of releases from solid waste management units (SWMU) and other areas of concern (AOC) at the Brunswick, Inc., Mercury Marine Division (Mercury) facility in Fond du Lac, Fond du Lac County, Wisconsin. This summary highlights the results of the PA/VSI and the potential for releases of hazardous wastes or hazardous constituents from SWMUs and AOCs identified.

The Mercury facility manufactures outboard marine propulsion systems. The facility began operation in about 1964 and employs about 2,500 people. The facility consists of five separate plants and a drum storage shed used for diecasting, investment casting, metal machining, metal finishing, metal cleaning, painting, assembly, and storage. The facility also formerly operated a gray and ductile iron foundry in Plant 8. The foundry was decommissioned in 1991, and is currently being dismantled.

The manufacture of outboard marine propulsion systems generates the following wastes: nonhazardous scrap metal; nonhazardous waste coolant; nonhazardous process wastewater; nonhazardous wastewater treatment system (WTS) sludge; hazardous WTS sludge (F019); hazardous spent mineral spirits (D001); nonhazardous machining dust; nonhazardous foundry dust; nonhazardous paint sludge; hazardous paint sludge (D007); hazardous waste paint-related material (F003, F005) and hazardous still bottoms (F003, F005); nonhazardous foundry sand; nonhazardous waste salt cores; nonhazardous aluminum dross; nonhazardous waste wax; and nonhazardous ceramic waste. Formerly, the facility also generated waste freon (F002) and trichloroethene (TCE) (F001).

The facility occupies about 115 acres in a mixed-use area. Mercury has been the sole owner and operator of the facility since its construction in 1964.

The PA/VSI identified the following thirty-three SWMUs and one AOC at the facility:

Solid Waste Management Units

- 1a. Spent Solvent Satellite Accumulation Area (SAA)
- 1b. Spent Solvent SAA
- 1c. Spent Solvent SAA
- 2. North Paint Booth Wastewater Treatment System (WTS)
- 3. Solvent Recovery Still
- 4. Plant 15 WTS
- 5. Frog Ponds
- 6. Scrap Metal SAAs

- 7 Paint Sludge Storage Area
- 8 Drum Storage Shed
- 9 Waste Coolant Storage Area
- 10 Former Drum Storage Area (DSA)
- 11 Tool Room Baghouse
- 12 Plant 15 Scrap Metal Storage Area
- 13 Plant 15 Sludge Storage Area
- 14 Paint Sludge SAs
- 15 Plant 4 Dust Collectors
- 16 Plants 8 and 98 Dust Collectors
- 17 Plant 98 Nonhazardous Waste Dumpster
- 18 Foundry Sand Pile
- 19 Plant 98 WTS
- 20 Plant 4 Scrap Metal Storage Area
- 21 Plant 4 Hazardous Waste DSA
- 22 Plant 4 Oil/Water Separator
- 23 Plant 4 WTS
- 24 Former Plant 4 WTS Sludge Dumpster
- 25 Plant 17 Dust Collectors
- 26 Plant 17 Foundry Sand Collection Truck
- 27 Plant 17 Foundry Sand Collection Hoppers
- 28 Plant 17 Nonhazardous Waste Dumpster
- 29 Aluminum Dross Cooling Area
- 30 Plant 17 Scrap Metal Dumpster
- 31 Plant 17 WTS
- 32 Plant 17 WTS Sludge Dumpster
- 33 Wax Waste Storage Area

Area of Concern

1 Contaminated Soil

The overall potential for release to the environment from this facility is low. Floor drains at the facility are sealed. The facility overlies poorly drained clay soils, which would inhibit infiltration to ground water. Outdoor drainage at the facility discharges into the Fond du Lac Wastewater Treatment Plant (FWTP) via sanitary sewers. SWMUs at the facility have containment and/or are on floors that are undrained or drain to containment tanks. Areas around SWMUs are paved. The storm sewer drains at the facility go directly to the FWTP. A release to paved areas could be contained and collected or treated at the FWTP. The facility manages volatile wastes in sealed containers, indoors. A release to air from this facility, therefore, is unlikely.

The facility has been regulated as a large-quantity generator and storage facility since 1980. Waste paint-related material (F003, F005) and spent mineral spirits (D001), are stored in the Drum Storage Shed (SWMU 8). Formerly, other hazardous wastes (F001, F002) were also stored in SWMU 8. Before 1986, the Former Drum Storage Area (SWMU 10) was used to store the same hazardous wastes. SWMU 10 was removed and replaced by SWMU 8, but no

documentation of a formal RCRA closure of SWMU 10 was available in Wisconsin Department of Natural Resources (WDNR) or U.S. Environmental Protection Agency (EPA) files.

Ground water in the City of Fond du Lac is used as a municipal water supply. The nearest municipal well field is 1 mile southeast and downgradient of the facility. The nearest residential well is 0.5 mile southeast and downgradient of the facility.

PRC recommends that the facility locate documentation of the formal RCRA closure of SWMU 10 and that soil and groundwater sampling and analyses be considered depending on the results. PRC also recommends that the facility store foundry sand in a covered container, rather than the Foundry Sand Pile (SWMU 18). PRC recommends that the facility submit the results of the investigation into the Contaminated Soil (AOC 1) discovered at Plant 4 and resulting remedial actions to WDNR as soon as they become available. PRC recommends no further actions at all other SWMUs.

1.0 INTRODUCTION

PRC Environmental Management, Inc. (PRC), received Work Assignment No. R05032 from the U.S. Environmental Protection Agency (EPA) under Contract No. 68-W9-0006 (TES 9) to conduct preliminary assessments (PA) and visual site inspections (VSI) of hazardous waste treatment and storage facilities in Region 5.

As part of the EPA Region 5 Environmental Priorities Initiative, the RCRA and CERCLA programs are working together to identify and address RCRA facilities that have a high priority for corrective action using applicable RCRA and CERCLA authorities. The PA/VSI is the first step in the process of prioritizing facilities for corrective action. Through the PA/VSI process, enough information is obtained to characterize a facility's actual or potential releases to the environment from solid waste management units (SWMU).

A SWMU is defined as any discernible unit at a RCRA facility in which solid wastes have been placed and from which hazardous constituents might migrate, regardless of whether the unit was intended to manage solid or hazardous waste.

The SWMU definition includes the following:

- RCRA-regulated units, such as container storage areas, tanks, surface impoundments, waste piles, land treatment units, landfills, incinerators, and underground injection wells
- Closed and abandoned units
- Recycling units, wastewater treatment units, and other units that EPA has usually exempted from standards applicable to hazardous waste management units
- Areas contaminated by routine and systematic releases of wastes or hazardous constituents. Such areas might include a wood preservative drippage area, a loading or unloading area, or an area where solvent used to wash large parts has continually dripped onto soils.

An AOC is defined as any area where a release to the environment of hazardous waste or constituents has occurred or is suspected to have occurred on a nonroutine and nonsystematic basis. This includes any area where a strong possibility exists that such a release might occur in the future.

The purpose of the PA is as follows:

- Identify SWMUs and AOCs at the facility
- Obtain information on the operational history of the facility
- Obtain information on releases from any units at the facility
- Identify data gaps and other informational needs to be filled during the VSI

The PA generally includes review of all relevant documents and files located at state offices and at the EPA Region 5 office in Chicago.

The purpose of the VSI is as follows:

- Identify SWMUs and AOCs not discovered during the PA
- Identify releases not discovered during the PA
- Provide a specific description of the environmental setting
- Provide information on release pathways and the potential for releases to each medium
- Confirm information obtained during the PA regarding operations, SWMUs, AOCs, and releases

The VSI includes interviewing appropriate facility staff; inspecting the entire facility to identify all SWMUs and AOCs; photographing all visible SWMUs; identifying evidence of releases; making a preliminary selection of potential sampling parameters and locations, if needed; and obtaining additional information necessary to complete the PA/VSI report.

This report documents the results of a PA/VSI of the Brunswick, Inc., Mercury Marine Division (Mercury) facility (EPA Identification No. WID 073 830 028) in Fond du Lac, Fond du Lac County, Wisconsin. The PA was completed on June 12, 1992. PRC gathered and reviewed information from the Wisconsin Department of Natural Resources (WDNR), U.S. Geological Survey (USGS), U.S. Department of Agriculture (USDA), U.S. Department of Commerce (USDC), Federal Emergency Management Agency (FEMA), Wisconsin Geological and Natural History Survey (WGNHS), City of Fond du Lac and from EPA Region 5 RCRA files. The VSI was conducted on June 15, 1992. It included interviews with facility representatives and a walk-through inspection of the facility. PRC identified 33 SWMUs and one AOC at the facility.

The VSI is summarized and 32 inspection photographs are included in Attachment A.
Field notes from the VSI are included in Attachment B.

2.0 FACILITY DESCRIPTION

This section describes the facility's location; past and present operations; waste generating processes and waste management practices; history of documented releases; regulatory history, environmental setting; and receptors.

2.1 FACILITY LOCATION

The Mercury facility is located at W6250 Pioneer Road, in Fond du Lac, Fond du Lac County, Wisconsin. Figure 1 shows the location of the facility in relation to the surrounding topographic features (latitude 43°45'35"N and longitude 88°27'55"W). The facility occupies about 115 acres in a mixed-use area.

The facility is bordered on the north by Brenner Tank, Inc.; on the west by State Highway 41 and a Holiday Inn hotel; on the south by International Paper; and on the east by Purina Mills, Inc., Manowske Welding Corporation, and a private residence.

2.2 FACILITY OPERATIONS

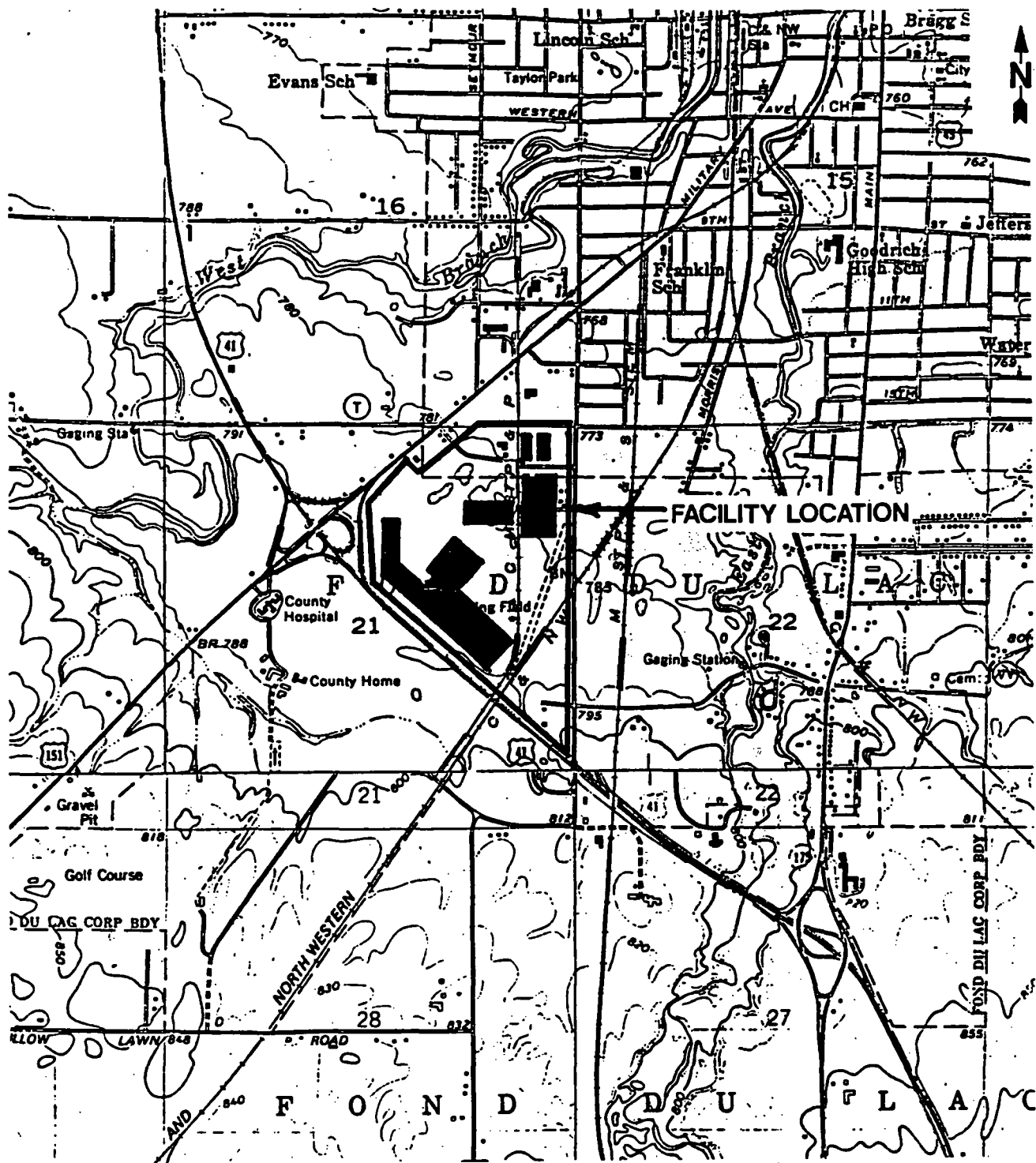
The Mercury facility manufactures outboard marine propulsion systems. The facility began operation in about 1964. Before Mercury built the facility, the land was used for agriculture or was undeveloped. Mercury is the sole owner and operator, and employs about 2,500 people.

The production of outboard marine propulsion systems require the following processes: die casting and investment casting of parts; metal machining; metal finishing; metal cleaning; painting; and assembly. The facility also formerly operated a gray and ductile iron foundry. The foundry was decommissioned in 1991, and is currently being dismantled.

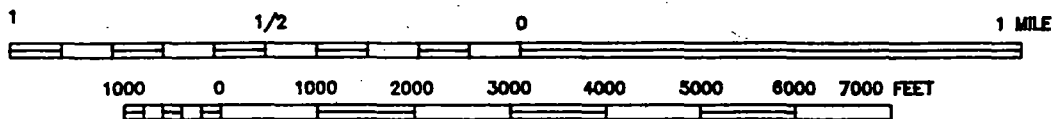
The facility consists of six buildings, Plants 4, 8, 15, 17, 98 and the Drum Storage Shed (SWMU 8), occupying about two million square feet. Waste generating processes are shown in Table 1. Solid wastes generated from these processes and the SWMUs where they are managed are discussed in detail in Section 2.3.

2.3 WASTE GENERATION AND MANAGEMENT

This section discusses the wastes generated and managed at the five plants and Drum Storage Shed making up the Mercury facility. The facility generates, treats, and stores several



SCALE 1:24000



SCALE 1"=2,000'



QUADRANGLE LOCATION

SOURCE: MODIFIED FROM USGS, FOND DU LAC QUADRANGLE, 1985

BRUNSWICK, INC., MERCURY MARINE DIVISION
FOND DU LAC, WISCONSIN

FIGURE 1
FACILITY LOCATION

PRC ENVIRONMENTAL MANAGEMENT, INC.

TABLE 1
WASTE GENERATING PROCESSES BY BUILDING

<u>BUILDING</u>	<u>PROCESSES</u>	
	<u>CURRENT</u>	<u>FORMER</u>
PLANT 4	Machining, tin plating, heat treating of parts; wastewater treatment.	Chromate conversion coating of aluminum; copper plating of parts.
PLANT 8	None	Gray and ductile iron foundry
PLANT 15	Metal machining; chromate conversion coating of aluminum; metal cleaning; painting; solvent recovery; assembly; wastewater treatment.	Assembly only
PLANT 17	Aluminum die casting; wastewater treatment.	Unchanged
PLANT 98	Investment casting; wastewater treatment.	Unchanged

hazardous and nonhazardous wastes. The facility determines whether a waste is hazardous or not using two methods: 1) analytical laboratory analysis, and 2) knowledge of the generation or treatment of the waste. PRC observed no documentation that EPA or WDNR challenged the classification of waste streams at the facility. Current and former waste generation and management of both hazardous and nonhazardous wastes are detailed below. SWMUs and their current status are identified in Table 2. The locations of SWMUs in relation to the facility layout are shown in Figure 2. Wastes generated at the facility are summarized in Table 3. Waste generation rates, and final disposition are presented in Table 4.

2.3.1 Plant 4

Plant 4 is currently used for machining parts, tin plating parts, heat treating parts, and wastewater treatment. These processes generate the following waste streams: nonhazardous scrap metal, nonhazardous waste coolant, nonhazardous process wastewater, wastewater treatment system (WTS) sludge (F019), spent mineral spirits (D001), and nonhazardous machining dust. Plant 4 also formerly generated spent trichloroethene (TCE) (F001).

Metal machining generates scrap metal, waste coolant, and machining dust. The scrap metal is accumulated in Scrap Metal Satellite Accumulation Areas (SAA) (SWMU 6) near the grinding machinery. After satellite accumulation, this waste is stored in the Plant 4 Scrap Metal Storage Area (SWMU 20). Waste coolant is accumulated in one of two feed separator tanks that feed the Plant 4 Oil/Water Separator (SWMU 22). The oil layer is removed from the SWMU by a private contractor. The water layer is drained to the Fond du Lac Wastewater Treatment Plant (FWTP). Machining dust is collected by several Plant 4 Dust Collectors (SWMU 15). This waste is ultimately stored in the Plant 98 Nonhazardous Waste Dumpster (SWMU 17).

Plant 4's tin plating line generates process wastewater. The wastewater is treated in the Plant 4 WTS (SWMU 23). The Plant 4 WTS generates WTS sludge (F019). This waste is accumulated at the point of generation, and then stored in the Plant 15 Sludge Storage Area (SWMU 13) in Plant 15. Plant 4 formerly performed chromate conversion coating of aluminum and copper plating processes. Both of these processes were discontinued in 1991. These processes produced wastewater that was treated in the Plant 4 WTS. The treatment generated WTS sludge (F019) that was accumulated at the point of generation, then stored in the Former Plant 4 WTS Sludge Dumpster (SWMU 24).

Parts cleaning in Plant 4 generates spent mineral spirits (D001). This waste is stored in the Plant 4 Hazardous Waste Drum Storage Area (DSA) (SWMU 21), and is ultimately stored in

TABLE 2
SOLID WASTE MANAGEMENT UNITS

<u>SWMU Number</u>	<u>SWMU Name</u>	<u>RCRA Hazardous Waste Management Unit^a</u>	<u>Status</u>
1a	Spent Solvent SAA	No	Active; accumulation of hazardous waste
1b	Spent Solvent SAA	No	Active; accumulation of hazardous waste
1c	Spent Solvent SAA	No	Active; accumulation of hazardous waste
2	North Paint Booth WTS	No	Active; accumulation and treatment of hazardous and nonhazardous waste
3	Solvent Recovery Still	No	Active; treatment of hazardous and nonhazardous waste
4	Plant 15 WTS	No	Active; treatment of hazardous and nonhazardous waste
5	Frog Ponds	No	Active; accumulation of nonhazardous waste
6	Scrap Metal SAAs	No	Active; accumulation of nonhazardous waste
7	Paint Sludge Storage Area	No	Active; less than 90- day storage of hazardous and nonhazardous waste
8	Drum Storage Shed	Yes	Active; greater than 90-day storage of hazardous waste
9	Waste Coolant Storage Area	No	Active; storage of nonhazardous waste
10	Former DSA	Yes	Inactive since 1986; formerly active for greater than 90-day storage of hazardous waste; no formal closure documen- tation found

TABLE 2 (continued)
SOLID WASTE MANAGEMENT UNITS

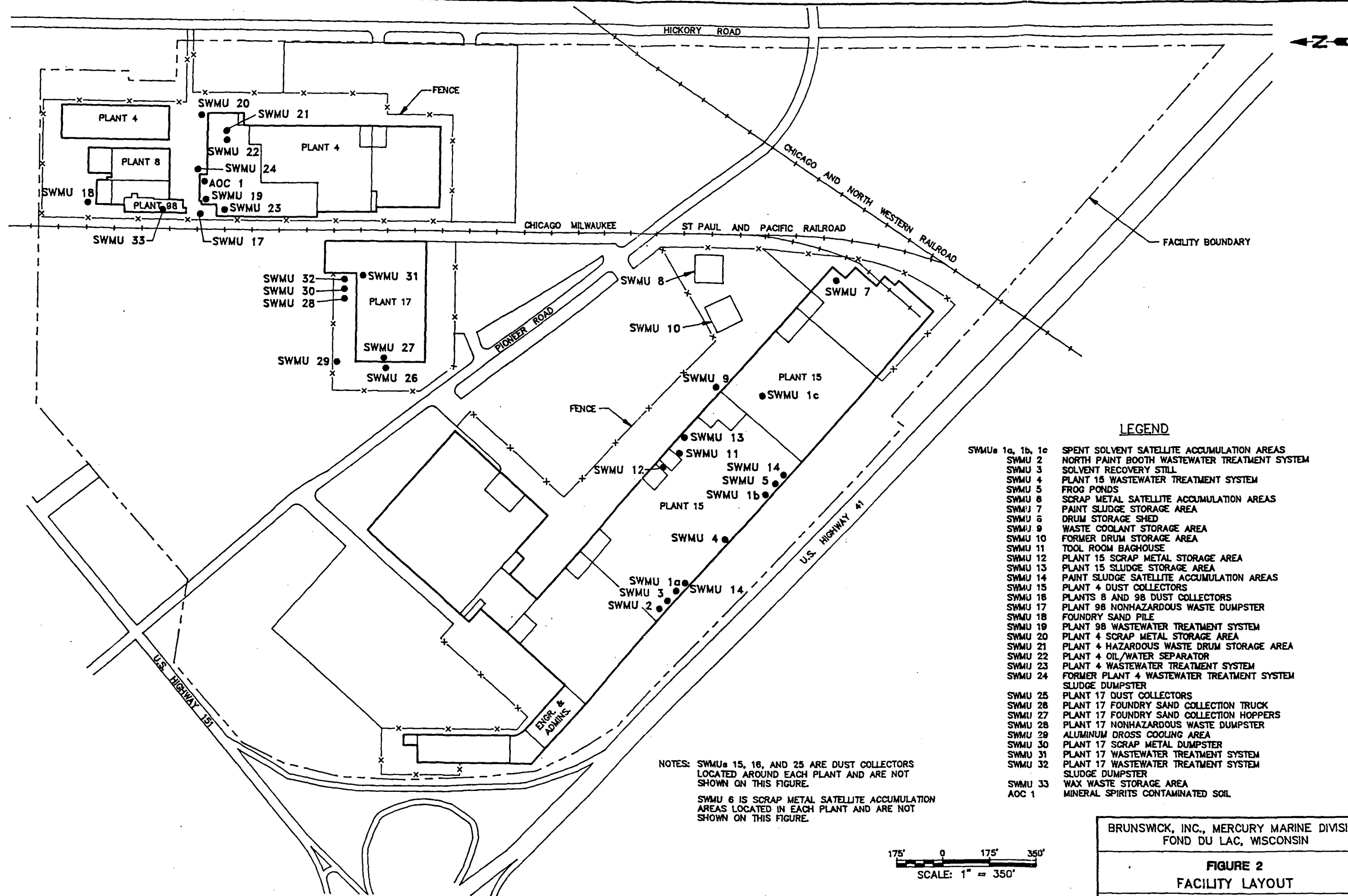
<u>SWMU Number</u>	<u>SWMU Name</u>	<u>RCRA Hazardous Waste Management Unit^a</u>	<u>Status</u>
11	Tool Room Baghouse	No	Active; accumulation of nonhazardous waste
12	Plant 15 Scrap Metal Storage Area	No	Active; storage of nonhazardous waste
13	Plant 15 Sludge Storage Area	No	Active; less than 90-day storage of hazardous waste
14	Paint Sludge SAAs	No	Active; accumulation of hazardous and nonhazardous waste
15	Plant 4 Dust Collectors	No	Active; accumulation of nonhazardous waste
16	Plants 8 and 98 Dust Collectors	No	Active in the investment castings area; inactive and decommissioned in the iron foundry area.
17	Plant 98 Nonhazardous Waste Dumpster	No	Active; storage of nonhazardous waste
18	Foundry Sand Pile	No	Active; storage of nonhazardous waste
19	Plant 98 WTS	No	Active; treatment and accumulation of nonhazardous waste
20	Plant 4 Scrap Metal Storage Area	No	Active; storage of nonhazardous waste
21	Plant 4 Hazardous Waste DSA	No	Active; storage of hazardous waste
22	Plant 4 Oil/Water Separator	No	Active; treatment and accumulation of nonhazardous waste
23	Plant 4 WTS	No	Active; treatment of wastewater and accumulation of hazardous sludge
24	Former Plant 4 WTS Sludge Dumpster	No	Inactive since an unknown date

**TABLE 2 (continued)
SOLID WASTE MANAGEMENT UNITS**

<u>SWMU Number</u>	<u>SWMU Name</u>	<u>RCRA Hazardous Waste Management Unit^a</u>	<u>Status</u>
25	Plant 17 Dust Collectors	No	Active; accumulation of nonhazardous waste
26	Plant 17 Foundry Sand Collection Truck	No	Active; accumulation of nonhazardous waste
27	Plant 17 Foundry Sand Collection Hoppers	No	Active; storage of nonhazardous waste
28	Plant 17 Nonhazardous Waste Dumpster	No	Active; storage of nonhazardous waste
29	Aluminum Dross Cooling Area	No	Active; storage of nonhazardous waste
30	Plant 17 Scrap Metal Dumpster	No	Active; storage of nonhazardous waste
31	Plant 17 WTS	No	Active; treatment of nonhazardous waste
32	Plant 17 WTS Sludge Dumpster	No	Active; storage of nonhazardous waste
33	Wax Waste Storage Area	No	Active; storage of nonhazardous waste

Note:

^a A RCRA hazardous waste management unit is one that currently requires or formerly required submittal of a RCRA Part A or Part B permit application.



BRUNSWICK.DWG - 01/11/93 - CTR - 300-ROB037M08

SOURCE: MODIFIED FROM MERCURY, 1980b

BRUNSWICK, INC., MERCURY MARINE DIVISION
FOND DU LAC, WISCONSIN

FIGURE 2
FACILITY LAYOUT

PRC ENVIRONMENTAL MANAGEMENT, INC.

TABLE 3
SOLID WASTES

<u>Waste/EPA Waste Code^a</u>	<u>Source</u>	<u>Solid Waste Management Unit</u>
Scrap Metal/NA	Plants 4, 15, and 17	SWMUs 6, 12, 20, and 30
Waste Coolant/NA	Plants 4 and 15	SWMUs 9 and 22
Process Wastewater/NA	Plants 4, 15, 17, and 98	SWMUs 2, 4, 5, 19, 22, 23, and 31
WTS Sludge/F019	Plants 4 and 15	SWMUs 13, 23, and 24
Spent mineral spirits/D001	Plant 4	SWMUs 8, 10, and 21
Spent trichloroethene/F001	Plant 4	SWMUs 8 and 10
Machining dust/NA	Plants 4, 8, 15, and 98	SWMUs 11, 12, 15, 16, and 17
Nonhazardous paint sludge/NA	Plant 15	SWMUs 2, 5, 7, and 14
Hazardous paint sludge/D007	Plant 15	SWMUs 2, 5, 7, and 14
Waste paint-related material/F003, F005	Plant 15	SWMUs 1a, 1b, 1c, 3, 8, and 10
Still bottoms/F003, F005	Plant 15	SWMUs 1a, 3, 8, and 10
Foundry sand/NA	Plants 8 and 17	SWMUs 18, 26, and 27
Foundry dust/NA	Plants 8 and 17	SWMUs 16, 17, 25 and 28
Waste salt cores/NA	Plant 17	SWMU 28
Aluminum dross/NA	Plant 17	SWMU 29
Nonhazardous WTS sludge/NA	Plants 17 and 98	SWMUs 17, 19, 31, and 32
Waste wax/NA	Plant 98	SWMU 33
Ceramic waste/NA	Plant 98	SWMU 17
Waste freon/F002	Plant 98	SWMU 8 and 10

Note:

^a Not applicable (NA) designates nonhazardous waste.

TABLE 4
WASTE GENERATION RATES, TRANSPORTERS, AND FINAL DISPOSITION

<u>Waste Stream</u>	<u>Generation Rate</u>	<u>Transporter</u>	<u>Final Disposition</u>	<u>Location</u>
Scrap Metal	500 tons per year (tons/yr)	Various	Recycled	Fond du Lac, WI
Waste Coolant	1,700 gallons per week	Safety-Kleen Corporation (Safety-Kleen)	Recycled	Dolton, IL
Process Wastewater	96,000 gallons per day	None	On-site Treatment	Fond du Lac, WI
Hazardous WTS Sludge (F019)	110,000 tons/yr	E&K Hazardous Waste	Rendered nonhazardous, then landfilled	*
Spent Mineral Spirits (D001)	16,000 tons/yr	Safety-Kleen	Recycled	Dolton, IL
Spent Trichloroethene (F001)	24,500 pounds per year	Avganic Industries, Inc. (Avganic)	Recycled	Cottage Grove, WI
Machining Dust	5 tons/yr	Browning Ferris Industries	Landfilled	Green Lake, WI
Nonhazardous Paint Sludge	220 cubic yards per year	*	Landfilled	*
Hazardous Paint Sludge (D007)	88,000 tons/yr	E&K Hazardous Waste	Stabilization/chemical extraction, then landfilled	Belleville, MI
Waste Paint-related material (F003 and F005)	32,000 tons/yr	Avganic	Recycled	Cottage Grove, WI
Still Bottoms (F003 and F005)	Included with above waste paint-related material	Avganic	Recycled	Cottage Grove, WI
Foundry Sand	437 tons/yr	Browning Ferris Industries	Landfilled	Green Lake, WI
Foundry Dust	50 tons/yr	Browning Ferris Industries	Landfilled	Green Lake, WI
Waste Salt Cores	*	Browning Ferris Industries	Landfilled	Green Lake, WI

TABLE 4 (continued)

WASTE GENERATION RATES, TRANSPORTERS, AND FINAL DISPOSITION

<u>Waste Stream</u>	<u>Generation Rate</u>	<u>Transporter</u>	<u>Final Disposition</u>	<u>Location</u>
Aluminum Dross	150,000 pounds/month	*	Recycled	*
WTS Sludge	59 tons/yr	E&K Hazardous Waste	Landfilled	WI
Waste Wax	*	Waste Management, Inc.	Recycled	*
Ceramic Waste	*	Browning Ferris Industries	Landfilled	Green Lake, WI
Waste Freon (F002)	10,260 pounds per year	Avganic	Recycled	Cottage Grove, WI

Note:

* The facility was unable to provide this information at the time of this writing.

the Drum Storage Shed (SWMU 8). This waste was formerly stored in the Former DSA (SWMU 10).

Plant 4 formerly operated a trichloroethene (TCE) vapor degreaser for degreasing of parts prior to heat treatment. The spent TCE (F001) was stored in the Drum Storage Shed (SWMU 8) or the Former DSA (SWMU 10).

2.3.2 Plant 8

Plant 8 is currently vacant, but was formerly a gray and ductile iron foundry. This process generated foundry sand and foundry dust. When spent, the foundry sand was stored in the Foundry Sand Pile (SWMU 18). Foundry dust was collected in one of several Plant 8 and 98 Dust Collectors (SWMU 16) and was ultimately stored in the Plant 98 Nonhazardous Waste Dumpster (SWMU 17). The foundry was closed in 1991.

2.3.3 Plant 15

Plant 15 operations include: metal machining; chromate conversion coating of aluminum; metal cleaning; painting; and solvent recovery. These processes generate the following wastes: nonhazardous scrap metal; nonhazardous waste coolant; nonhazardous machining dust; nonhazardous process wastewater; WTS Sludge (F019); nonhazardous paint sludge; hazardous paint sludge (D007); waste paint-related material (F003, F005); and still bottoms (F003, F005).

Metal machining operations consist of metal cutting and grinding. This generates scrap metal, waste coolant and machining dust. Scrap metal is accumulated throughout the plant in the Scrap Metal SAAs (SWMU 6). After satellite accumulation, this waste is stored in the Plant 15 Scrap Metal Storage Area (SWMU 12). Waste coolant is pumped through sealed concrete trenches to a collection point where it is drummed. This waste is then stored in the Waste Coolant Storage Area (SWMU 9). Machining dust is accumulated in the Tool Room Baghouse (SWMU 11). After satellite accumulation, this waste is stored in the Scrap Metal Storage Area (SWMU 12).

Chromate conversion coating of aluminum generates process wastewater and WTS sludge (F019). The process wastewater is generated from rinse waters and baths. Overflow rinse waters are released directly to FWTP. Bath waters are pumped to the Plant 15 WTS (SWMU 4). The resulting sludge (F019) is accumulated at the point of generation, and then stored in the Plant 15 Sludge Storage Area (SWMU 13).

Metal cleaning operations generate process wastewater from a six-stage alkaline cleaning line. The wastewater is pumped directly to the Plant 15 WTS (SWMU 4) for treatment.

Painting operations generate nonhazardous paint sludge, hazardous paint sludge (D007), process wastewater, waste paint-related material (F003, F005), and still bottoms (F003, F005). Paint booths are water wash systems. The process water is circulated through the Frog Ponds (SWMU 5) or the North Paint Booth WTS (SWMU 2). These units separate out paint sludges. The top coat paint lines generate a nonhazardous paint sludge at the Frog Ponds (SWMU 5) and the North Paint Booth WTS (SWMU 2). The primer coat lines generate hazardous paint sludge (D007) at the North Paint Booth WTS (SWMU 2). The paint sludges are accumulated in the Paint Sludge SAAs (SWMU 14). After satellite accumulation, these wastes are stored in the Paint Sludge Storage Area (SWMU 7). The process wastewater is pumped into the Plant 15 WTS (SWMU 4), about every 2 months. Cleaning the paint guns generates waste paint-related material (F003 and F005). This waste is accumulated in Spent Solvent SAAs (SWMU 1a, 1b, or 1c). After satellite accumulation, this waste is treated in the Solvent Recovery Still (SWMU 3) and reused on site. Still bottoms (F003 and F005) from SWMU 3 and nonrecoverable waste paint-related material (F003, F005) are accumulated in Spent Solvent SAA (SWMU 1a) and then are stored in the Drum Storage Shed (SWMU 8). These wastes were formerly stored in the Former DSA (SWMU 10).

2.3.4 Plant 17

Plant 17 houses aluminum diecasting and wastewater treatment operations. Aluminum diecasting operations generate nonhazardous foundry sand, nonhazardous foundry dust, nonhazardous waste salt cores (nonhazardous), scrap metal, nonhazardous aluminum dross, nonhazardous process wastewater, and nonhazardous WTS sludge. Foundry sand is accumulated in the Plant 17 Foundry Sand Collection Truck (SWMU 26) or the Plant 17 Foundry Sand Collection Hoppers (SWMU 27). After satellite accumulation, this waste is stored in the Foundry Sand Pile (SWMU 18). Foundry dust is collected in one of 13 Plant 17 Dust Collectors (SWMU 25), then stored in the Plant 17 Nonhazardous Waste Dumpster (SWMU 28). A proprietary salt core diecasting process generates waste salt cores. Salt cores are stored in the Plant 17 Nonhazardous Waste Dumpster (SWMU 28). Scrap metal is collected in Scrap Metal SAAs (SWMU 6), and then stored in the Plant 17 Scrap Metal Dumpster (SWMU 30). Aluminum dross is accumulated in the Aluminum Dross Cooling Area (SWMU 29).

Die washing generates process wastewater. The wastewater is treated in the Plant 17 WTS (SWMU 31). Nonhazardous Plant 17 WTS sludge is stored in the Plant 17 WTS Sludge Dumpster (SWMU 32).

2.3.5 Plant 98

Plant 98 houses investment casting and wastewater treatment operations.

Investment casting of stainless steel parts generates the following nonhazardous wastes: waste wax, ceramic waste, machining dust, and process wastewater, and nonhazardous WTS sludge. The wax is generated from a lost wax die casting process. About 25 percent of the wax is recovered and is stored in the Wax Waste Storage Area (SWMU 33). Ceramic waste consists of waste from ceramic molds. This waste is stored in the Plant 98 Nonhazardous Waste Dumpster (SWMU 17). Machining dust is collected in the Plants 8 and 98 Dust Collectors (SWMU 16), and then stored in the Plant 98 Nonhazardous Waste Dumpster (SWMU 17). Process wastewater is generated in the propeller finishing area of Plant 98. The wastewater is treated in the Plant 98 WTS (SWMU 19). The resulting nonhazardous WTS sludge is accumulated at the point of generation, and then stored in the Plant 98 Nonhazardous Waste Dumpster (SWMU 17).

Plant 98 formerly used freon degreasing to clean the wax replicas. This process generated waste freon (F002). This waste was stored in the Drum Storage Shed (SWMU 8) or Former DSA (SWMU 10). The facility discontinued use of this solvent in 1990, and currently uses a biodegradable compound for wax replica cleaning.

2.3.6 Drum Storage Shed

The Drum Storage Shed (SWMU 8) does not contain production processes. This building is used for storage of hazardous waste and unused product.

2.4 HISTORY OF DOCUMENTED RELEASES

This section discusses the history of documented releases to ground water, surface water, air, and on-site soils at the facility.

On January 4, 1985, the WDNR filed a Solid Waste Facility Contact form regarding coolant leakage from a dumpster at Mercury. According to the form, the WDNR contacted Mr. Tom Baumgartner of Mercury about the coolant leakage from the dumpster located near Plant 19 (sic). There is not a Plant 19 at the facility. The dumpster contained aluminum shavings from aluminum machining operations and is mixed with nonhazardous machining coolant. WDNR requested that the facility investigate the source of leakage in the dumpster. Mr. Baumgartner agreed to the WDNR request (WDNR, 1985a). Information on investigative or remedial actions

taken by Mercury and subsequent correspondence by WDNR is unavailable. It is unknown if the coolant released to on-site soils. In 1985, aluminum machining operations would have been in Plant 4. PRC could not determine which dumpster was involved in this incident.

On May 17, 1985, Mercury sent a letter to WDNR regarding copper cyanide residue that permeated the concrete floor of Plant 4. The residue was discovered while Plant 4 was being prepared for other production operations. Plant 4 operated as a copper plating facility from May 1955 to January 1984. Grab concrete samples were taken by M.L. Fuhrman Company, Inc. (Fuhrman), and analyzed for copper and cyanide. In the letter, Mercury requested a response from WDNR regarding the classification of the contaminated concrete and regarding whether or not remedial actions were required. Mercury outlined the alternatives of on-site remediation and encapsulation in concrete as possible remedial actions that Mercury would consider rather than transportation of the concrete to a hazardous waste facility, which Mercury considered not cost effective (Mercury, 1985).

On June 18, 1985, WDNR visited the copper plating area to outline appropriate options for waste handling. WDNR informed Mercury that to dispose of the waste in its current state would not be permissible. WDNR gave Mercury two alternatives that would be permissible:

1) effectively treat the material on site, or 2) contract for disposal of the waste in a hazardous waste landfill. WDNR suggested that Mercury re-examine the amount of material that needed to be handled, and noted that on-site treatment would require extensive handling, and significant time for preparing a work plan and for subsequent review by WDNR. WDNR also pointed out that the cyanide concentrations of less than 10 parts per million would have to be reached in order for any treatment process to be accepted. Mercury stated that Fuhrman would perform a feasibility study to see if on-site treatment would be cost effective (WDNR, 1985b).

A memorandum was filed by the WDNR case representative on June 27, 1985, regarding the classification of the concrete in Plant 4. WDNR contended that the material should be considered hazardous waste on the basis of the characteristic reactivity (WDNR, 1985c). Facility representatives explained that the waste was ultimately removed from site and landfilled at a licensed hazardous waste landfill in Emill, Alabama.

On August 22, 1991, Mercury notified WDNR of a spill of about 300 gallons of nonhazardous paint sludge near Building 15. The spill took place during the loading of a paint sludge dumpster at SWMU 7. The spilled material was cleaned up immediately. PRC observed no documentation that WDNR or EPA approved the subsequent cleanup (Mercury, 1992).

During the spring of 1992, the facility was moving a water line in Plant 4. During the excavation a petroleum odor was detected. The resulting investigation revealed mineral spirits Contaminated Soil (AOC 1). It is not known when the release occurred. Facility representatives explained that the contaminated soil was removed and that analytical results from ground-water sampling revealed no contamination. Mercury's consultant has not filed the final report, so WDNR has not yet closed the investigation (see Section 4.0, AOC 1).

2.5 REGULATORY HISTORY

Mercury submitted a notification of Hazardous Waste Activity form to EPA on August 14, 1980 (Mercury, 1980a). Mercury submitted a RCRA Part A Permit Application on November 14, 1980 (Mercury, 1980b). The application listed the following process codes and capacities: container storage (S01) of up to 55,000 gallons of F001 through F006, F017, D000, D001, and D007 wastes in the Former DSA (SWMU 10); and tank storage (S02) of up to 20,000 gallons of D000 waste. The D000 waste code was filed in error.

Mercury submitted a revised RCRA Part A Permit Application on August 22, 1983 (Mercury, 1983). The application listed the following process codes and capacities: container storage (S01) of up to 11,000 gallons of F001, F003, and F005 wastes in the Former DSA (SWMU 10). The facility had never stored hazardous waste in tanks as the 1980 RCRA Part A Permit Application suggests. WDNR issued the facility an interim license for storage of up to 5,500 gallons of hazardous waste on September 12, 1983 (WDNR, 1983b).

On February 3, 1986, Mercury notified WDNR of its intent to move the licensed storage area, Former DSA (SWMU 10), about 100 feet southeast of its then present location (Mercury, 1986a). The reason for the move was to provide needed space for some new equipment. The Former DSA was decommissioned and moved in June 1986. PRC observed no documentation that WDNR approved the decommissioning or move. The current location of this unit is the Drum Storage Shed (SWMU 8).

Mercury submitted the Hazardous Waste Facility Operating License application to WDNR on December 3, 1986 (Mercury, 1986c). WDNR and EPA issued the facility a Hazardous Waste Facility Operation License (Number 03086) for container storage of up to 5,500 gallons of hazardous waste on September 15, 1988 (WDNR, 1988b; and EPA, 1988). The facility is currently regulated as a large-quantity generator and is licensed for greater than 90-day storage of hazardous waste in the Drum Storage Shed (SWMU 8).

The Mercury facility has a history of RCRA noncompliance. The facility was inspected at least six times between 1982 and 1988 (WDNR, 1982; 1983a; 1985a; 1985b; 1986a; 1988). Most of the violations involved paperwork deficiencies in inspection records and contingency plans. All areas of noncompliance were corrected.

The facility is required to have operating air permits. WDNR issued the facility seven air pollution control permits between 1985 and 1991. According to WDNR representatives, the facility has a history of compliance with these permits (PRC, 1992c). The facility does not have a history of odor complaints. The facility holds a Wisconsin Pollutant Discharge Elimination System Permit (number WI-0044938-1) according to the revised RCRA Part A Permit Application (Mercury, 1983). The receiving water body for outfalls is Lake Winnebago.

There is no CERCLA activity at the facility.

2.6 ENVIRONMENTAL SETTING

This section describes the climate; flood plain and surface water; geology and soils; and ground water in the vicinity of the facility.

2.6.1 Climate

The climate in Fond du Lac County is continental. The average monthly temperature in January is 19.6 degrees Fahrenheit (°F). The average monthly temperature in July is 72.5 °F. The highest daily maximum temperature is 84.9 °F in July. The lowest daily minimum temperature is 10.7 °F in January (USDA, 1973).

The total annual precipitation for the county is 29.02 inches. The mean annual lake evaporation for the county is about 27 inches (USDC, 1968). The 1-year, 24-hour maximum rainfall is about 2.5 inches (USDC, 1963). About 55 percent of the total annual precipitation for the county falls during the 5-month period between May and September. The growing season averages 151 days in Fond du Lac County. The average annual snowfall is 41 inches (USDA, 1973).

The prevailing wind is from the northwest in the winter and southwest in summer. Average wind speed is highest in April and November at 13 miles per hour. The climate in Fond du Lac County is influenced by Lake Winnebago, which is located in north-central Fond du Lac County (USDA, 1973).

2.6.2 Flood Plain and Surface Water

The facility is not in the 500-year flood plain (FEMA, 1988). The nearest surface water body is the Fond du Lac River. Near the facility, the Fond du Lac River splits into two branches. The east branch is about 0.4 mile east of the facility, and the west branch is about 0.4 mile north of the facility. The east branch is downgradient from the facility. The Fond du Lac River is used for recreational purposes. Other surface water bodies in the area include De Neveu Creek, which is about 2.4 miles east and Lake Winnebago, which about 2.8 miles north of the facility

Surface water runoff at the facility is toward the City of Fond du Lac sanitary sewers. These sewers lead to the FWTP (PRC, 1992b).

2.6.3 Geology and Soils

Soils near the facility are classified as Manawa silty clay loam on 0 to 2 percent slopes. These soils are described as deep, nearly level, and somewhat poorly-drained. Manawa silty clay loam is typically present in shallow drainageways and small depressions adjacent to wetlands. The surface layer of these soils are about 9 inches of black silt loam. Subsoil consist of 28 inches of mottled, reddish-brown, silty clay. A reddish-brown silty clay that underlies these soils (USDA, 1963).

Quaternary Period layers underlie the subsoil and consist of about 130 feet of clay and silt and 60 feet of gravel, clay, and silt. Underlying the Quaternary Period layer is 195 feet of Silurian Period Dolomite bedrock. Beneath the dolomite layer are layers of Ordovician Period formations. The Ordovician Period formations consist of 75 feet of sandstone and 105 feet of unconsolidated dolomite and sandstone. Underlying the unconsolidated layer is 415 feet of Cambrian Period sandstone. Beneath the sandstone is Precambrian Period slate, quartzite, and granite bedrock of unknown thickness (USGS, 1969).

2.6.4 Ground Water

The major ground-water aquifers in the City of Fond du Lac are the shallow Quaternary Period Dolomite, the Silurian Period Dolomite and the Cambrian Period Sandstone.

The shallow Quaternary Period aquifer is about 7 to 9 feet below ground surface (bgs) and is not widely used, because of the high clay content of the lacustrine deposits. The Silurian Period Dolomite aquifer is about 190 feet below ground surface (bgs). This aquifer is used as a private drinking water supply for residences outside of the City of Fond du Lac corporate limits. The

nearest private well is about 0.5 mile east and hydraulically downgradient of the facility. Ground water in this aquifer flows southeast. Well yields vary with permeability of the dolomite. Well yields range from 5 to 400 gallons per minute (gpm). The dolomite is separated from the sandstone by a layer of undifferentiated dolomite with low permeability.

The Cambrian sandstone is about 550 feet bgs and about 420 feet thick. This sandstone layer is the drinking water supply aquifer for the City of Fond du Lac. Ground water in the aquifer flows southeast. The City of Fond du Lac ground-water wells fields draw water from this aquifer. The nearest well field is about 1 mile southeast of the facility (USGS, 1962; PRC, 1992a)

2.7 RECEPTORS

The facility occupies 115 acres in a mixed-use area in Fond du Lac, Wisconsin, and employs about 2500 people. Fond du Lac has a population of about 37,800.

The facility is bordered on the north by Brenner Tank, Inc.; on the west by State Highway 41 and a Holiday Inn hotel; on the south by International Paper; and on the east by Purina Mills, Inc., Manowske Welding Corporation, and a private residence. The nearest school, Franklin Elementary School, is located 0.5 mile northeast of the facility. Access to the facility is limited by a fence and a 24-hour security guard.

The nearest surface water body is the Fond du Lac River. Near the facility, the Fond du Lac River splits into two branches. The east branch is about 0.4 mile east of the facility, and the west branch is about 0.4 mile north of the facility. The east branch is downgradient from the facility. The Fond du Lac River is used for recreational purposes. Other surface water bodies in the area include De Neveu Creek, which is about 2.4 miles east and Lake Winnebago, which is about 2.8 miles north of the facility

Ground water is used as a municipal water supply. The nearest private drinking water well is located about 0.5 mile southeast of the facility. This well is located downgradient of the facility.

No sensitive areas are located on site. The nearest wetland area, Supple Marsh, is located about 2 miles north of the facility at the Fond du Lac River outlet into Lake Winnebago.

3.0 SOLID WASTE MANAGEMENT UNITS

This section describes the 33 SWMUs identified during the PA/VSI. The following information is presented for each SWMU: description of the unit, dates of operation, wastes managed, release controls, history of documented releases, and PRC's observations. Figure 2 shows the SWMU locations.

SWMU 1a, 1b, 1c

Spent Solvent SAAs

Unit Description:

The Spent Solvent SAAs are indoors in Plant 15. These units are used to accumulate waste paint-related material (F003, F005) and still bottoms. The SAAs consist of 55-gallon metal drums. Waste paint-related material is released directly into the drums after cleaning paint guns. Still bottoms are drummed in the SAA after removal from the still at SWMU 1a.

Date of Startup:

PRC estimates the startup date to be about 1964.

Date of Closure:

These units are active.

Wastes Managed:

SWMUs 1a, 1b, and 1c manage waste paint-related material (F003, F005). SWMU 1a also manages still bottoms (F003 and F005). After satellite accumulation, this waste is managed in the Drum Storage Shed (SWMU 8) and was formerly managed in the Former DSA (SWMU 10).

Release Controls:

The Spent Solvent SAAs are indoors on concrete floors. SWMU 1a is in the still room in a concrete diked area that has a containment pit below the floor. SWMUs 1b and 1c are inside rooms separated from the main production area on floors without drains.

History of Documented Release:

No releases from these units have been documented.

Observations:

During the VSI, the units contained unknown amounts of waste. All three of the rooms containing Spent Solvent SAAs had paint-stained drums, floors, and walls. No evidence of release to environmental media was noted (see Photographs No. 3, 6, and 8).

SWMU 2**North Paint Booth WTS****Unit Description:**

The North Paint Booth WTS is indoors in the northwest corner of Plant 15. The unit consists of two separate systems that remove solids from the water wash paint booths one floor above. Each system includes an open-top circulation tank, clarifier tank, sludge press, and sludge hopper. Waste is generated when the circulation tanks are skimmed, sludge is removed from the press, and the water is changed.

Date of Startup:

This unit began operation in 1990.

Date of Closure:

This unit is active.

Wastes Managed:

This unit manages hazardous paint sludge (D007), process wastewater from the strontium chromate primer paint booth, nonhazardous paint sludge, and process wastewater from the finishing paint booth. Both hazardous and nonhazardous paint sludges are either accumulated in the Paint Sludge SAAs (SWMU 14) and then taken to the Paint Sludge Storage Area (SWMU 7) or taken directly to the Paint Sludge Storage Area (SWMU 7). Process wastewater is managed in the Plant 15 WTS (SWMU 4).

Release Controls:

This unit is indoors on a concrete floor.

**History of
Documented Release:**

No releases from this unit have been documented.

Observations:

During the VSI, the unit was operating. No evidence of release to environmental media was noted. Both sludge hoppers of the unit contained waste (see Photograph No. 2).

SWMU 3**Solvent Recovery Still****Unit Description:**

The Solvent Recovery Still is indoors, adjacent to SWMU 1a, in the northwest corner of Plant 15. This unit consists of a still and a holding tank with a capacity of about 200 gallons. The unit is used to reclaim waste paint-related materials (F003 and F005) for reuse at the facility. This unit is used about twice a week and has a process rate of about 1.5 gallons per minute.

Date of Startup:

This unit began operation in 1988.

Date of Closure:

This unit is active.

Wastes Managed:

This unit manages waste paint-related materials (F003 and F005) and still bottoms (F003 and F005). Reclaimed solvents from this unit are reused on site. Stillbottoms (F003 and F005) from this unit are accumulated in Spent Solvent SAA (SWMU 1a) and are ultimately managed in the Drum Storage Shed (SWMU 8) and were formerly managed in the Former DSA (SWMU 10).

Release Controls:

This unit is indoors on a concrete floor that drains to a containment trench beneath the floor. The unit is within a room separated from the main production area.

**History of
Documented Release:**

No releases from this SWMU have been documented.

Observations:

During the VSI, the unit was not operating. Paint-like stains were evident on the still, walls, and floor around the still (see Photograph No. 3).

SWMU 4**Plant 15 WTS****Unit Description:**

The Plant 15 WTS is indoor, along the northwest outside wall of Plant 15. This unit consists of a treatment system for chrome reduction, adjustment, and flocculation. The unit receives process wastewater from painting and chrome conversion coating operations. Floors within the facility are concrete.

Date of Startup:	This unit began operation in 1990.
Date of Closure:	The unit is active.
Wastes Managed:	This unit manages nonhazardous process wastewater. Effluent from this unit is released to the FWTP. The sludge generated by this unit is a hazardous waste from the chemical conversion coating of aluminum (F019). This waste is ultimately managed in the Plant 15 Sludge Storage Area (SWMU 13).
Release Controls:	This unit is indoors on a concrete floor. No floor drains are present in this unit. The tanks comprising this unit have overflow alarms.
History of Documented Release:	No releases from this SWMU have been documented.
Observations:	During the VSI, the unit was treating wastewater. The sludge hopper contained about 1 cubic yard of F019 sludge (see Photograph No. 5).
SWMU 5	Frog Ponds
Unit Description:	The Frog Ponds are indoors along the northwest outside wall of Plant 15. The unit consists of two open-top, concrete separation tanks. The unit separates paint sludge from paint booth wash water. Paint sludge is skimmed from the top of the water.
Date of Startup:	This unit began operation in 1969.
Date of Closure:	The unit is active.
Wastes Managed:	The unit manages nonhazardous paint sludge and process wastewater from the water wash paint booth. Wash water from this unit is ultimately treated in the Plant 15 WTS (SWMU 4). Paint sludge is accumulated in the Paint Sludge SAAs (SWMU 14). After

satellite accumulation, this waste is managed in the Paint Sludge Storage Area (SWMU 7)

Release Controls: The unit is indoors and consists of two open-top, concrete tanks. This unit drains to the Plant 15 WTS (SWMU 4).

History of Documented Release: No releases from this SWMU have been documented.

Observations: During the VSI, the unit was operating. Paint-like stains were evident on the wall and floor around this unit (see Photograph No. 7).

SWMU 6 Scrap Metal SAAs

Unit Description: The Scrap Metal SAAs are indoors throughout Plants 4, 15, and 17. The units consist of 1-cubic-yard luggers that accumulate scrap metals including aluminum, cast iron, and steel.

Date of Startup: PR estimates the startup date to be about 1964.

Date of Closure: The unit is active.

Wastes Managed: This unit manages scrap metals in open-top, 1-cubic-yard luggers. Wastes from this unit are ultimately managed in the Plant 15 Scrap Metal Storage Area (SWMU 12), Plant 4 Scrap Metal Storage Area (SWMU 20), or the Plant 17 Scrap Metal Dumpster (SWMU 30).

Release Controls: The SAAs are indoors on concrete floors.

History of Documented Release: No releases from this SWMU have been documented.

Observations: During the VSI, these units contained unknown amounts of scrap metals (see Photographs No. 9, 10, and 19).

SWMU 7**Paint Sludge Storage Area****Unit Description:**

The Paint Sludge Storage Area is indoors in the southeast corner of Plant 15. The unit consists of two 20-cubic-yard luggers that store hazardous paint sludge (D007) and nonhazardous paint sludge. Floors beneath the luggers drain to containment pits.

Date of Startup:

This unit began operation in 1988.

Date of Closure:

The unit is active.

Wastes Managed:

This unit is used to store hazardous (D007) and nonhazardous paint sludges in separate luggers. The hazardous sludge is transported off site, treated, and then landfilled at a licensed hazardous waste landfill by a private contractor. The nonhazardous sludge is ultimately landfilled at a solid waste landfill by a private contractor.

Release Controls:

The luggers are indoors on concrete floors and drain to containment tanks. The luggers are lined with plastic and are situated in bermed areas.

**History of
Documented Release:**

No releases from the unit have been documented.

Observations:

During the VSI, both luggers contained waste (see Photographs No. 11 and 12).

SWMU 8**Drum Storage Shed****Unit Description:**

The Drum Storage Shed is about 200 feet south of Plant 15. The shed is aluminum. The unit stores hazardous waste and unused product, including paint and solvent. The floor of this unit is concrete and has no floor drains.

Date of Startup:

This unit began operation in 1988.

Date of Closure:	The unit is active for greater than 90-day storage of hazardous waste.
Wastes Managed:	This unit manages mineral spirits (D001), waste paint-related material (F003 and F005), and still bottoms (F003 and F005) in 55-gallon metal drums. The unit formerly managed spent trichloroethene (F001) and waste freon (F002). The unit is also used to store unused solvent and paints. Waste from this unit is ultimately transported off site and recycled or incinerated by <i>private contractors</i> .
Release Controls:	The unit is indoors and has a concrete, diked floor. Waste is stored in 55-gallon metal drums that are kept sealed.
History of Documented Release:	No releases from this unit have been documented.
Observations:	During the VSI, the unit contained eighty-nine 55-gallon drums of spent mineral spirits (D001), waste paint-related material (F003 and F005), spent trichloroethene (F001), waste freon (F002), and still bottoms (F003 and F005). The unit also contained several 55-gallon drums of unused solvent and paint (see Photographs No. 13 and 14). No evidence of release to environmental media was noted during the VSI.
SWMU 9	Waste Coolant Storage Area
Unit Description:	The Waste Coolant Storage Area is outdoors along the southeast wall of Plant 15. The unit consists of 55-gallon metal drums on a concrete driveway. The concrete area drains to storm sewers that flow to the FWTP.
Date of Startup:	This unit began operation in 1988.
Date of Closure:	The unit is active.

Wastes Managed: This unit manages nonhazardous waste coolant in 55-gallon drums. Waste from this unit is transported off site and recycled by a private contractor.

Release Controls: This unit is outdoors on a concrete driveway. Waste is kept in sealed 55-gallon drums.

History of Documented Release: No releases from this SWMU have been documented.

Observations: During the VSI, the unit contained fourteen 55-gallon drums of waste (see Photograph No. 15). No evidence of release to environmental media was noted during the VSI.

SWMU 10 **Former DSA**

Unit Description: The Former DSA was outdoors along the southeast wall of Plant 15. The unit was 100 feet northwest of the current Drum Storage Shed (SWMU 8).

Date of Startup: This unit began operation in 1983.

Date of Closure: The unit has been inactive since 1986. During the PA/VSI, PRC did not observe any documentation that this unit underwent RCRA closure when it was moved.

Wastes Managed: This unit managed spent mineral spirits (D001), waste paint-related material (F003 and F005), spent trichloroethene (F001), waste freon (F002), and still bottoms (F003 and F005) in 55-gallon drums for greater than 90 days. Waste from this unit was ultimately transported off site for incineration or recycling by private contractors.

Release Controls: The Former DSA was a 30- by 40-foot, concrete, diked platform.

History of Documented Release: No releases from this unit have been documented.

Observations: During the VSI, no evidence of release was observed. This unit has been removed (see Photograph No. 15).

SWMU 11 Tool Room Baghouse

Unit Description: The Tool Room Baghouse is indoors along the outside southeast wall of the Plant 15. The unit consists of a baghouse connected to 55-gallon drums. Dust from tool room machining and grinding operations is collected by the baghouse and deposited in the drums.

Date of Startup: This unit began operation in 1990.

Date of Closure: The unit is active.

Wastes Managed: This unit manages nonhazardous machining dust and fines from machining and grinding operations. Waste from this unit is stored in the Plant 15 Scrap Metal Storage Area (SWMU 12) and ultimately transported off site by a private contractor.

Release Controls: The unit is indoors. Drums are connected directly to the baghouse.

History of Documented Release: No releases from this unit have been documented.

Observations: During the VSI, the unit was operating. No evidence of release was noted (see Photograph No. 16).

SWMU 12 Plant 15 Scrap Metal Storage Area

Unit Description: The Plant 15 Scrap Metal Storage Area is indoors along the outside southeast wall of Plant 15. The unit consists of three 10-cubic-yard luggers situated on a concrete floor.

Date of Startup: This unit has been active since about 1989.

Date of Closure: The unit is active.

Wastes Managed:	This unit manages nonhazardous scrap metal in metal luggers. Waste from this unit is ultimately transported off site and recycled by various private contractors.
Release Controls:	This unit is indoors on a concrete floor that does not have floor drains. The waste is stored in open-top metal luggers.
History of Documented Release:	No releases from this unit have been documented.
Observations:	During the VSI, the unit contained an unknown amount of waste. No evidence of release was noted (see Photograph No. 17).
SWMU 13	Plant 15 Sludge Storage Area
Unit Description:	The Plant 15 Sludge Storage Area is indoors along the outside southeast wall of Plant 15. The unit consists of a 20-cubic-yard lugger on a concrete floor. The floor in this unit drains into a containment pit.
Date of Startup:	This unit has been active since 1988.
Date of Closure:	The unit is active.
Wastes Managed:	This unit manages hazardous WTS sludge (F019). Waste from this unit is ultimately transported off site, rendered nonhazardous, and landfilled at a licensed hazardous waste landfill by a private contractor.
Release Controls:	The unit is an indoors, plastic-lined, metal lugger. The floor beneath the unit is concrete and drains to a containment tank
History of Documented Release:	No releases from this unit have been documented.
Observations:	During the VSI, the unit contained about 1 cubic yard of waste. No evidence of release was noted (see Photograph No. 18).

SWMU 14**Paint Sludge SAAs****Unit Description:**

The Paint Sludge SAAs are indoors near the three water wash paint booths in Plant 15. The unit consists of 55-gallon drums that are used to accumulate paint sludge.

Date of Startup:

This SWMU has been active since 1964.

Date of Closure:

The unit is active.

Wastes Managed:

This unit manages hazardous paint sludge (D007) and nonhazardous paint sludge in 55-gallon drums. After satellite accumulation, this waste is stored in the Paint Sludge Storage Area (SWMU 7).

Release Controls:

The unit is indoors and consists of 55-gallon drums on a concrete floor. Hazardous sludge drums are kept sealed.

**History of
Documented Release:**

No releases from this unit have been documented.

Observations:

During the VSI, the unit contained an unknown amount of paint sludge. All the drums were paint-stained. No evidence of release was noted (see Photographs No. 1, 4, and 7).

SWMU 15**Plant 4 Dust Collectors****Unit Description:**

The dust collectors in Plant 4's machining area collect dust generated from machining operations in the area. Steel shot in the wheelabrators is used to remove excess particulate matter from parts being processed in this machinery. As dust and steel shot exit the wheelabrators, transferred by gravity into 55-gallon drums outside the facility. These drums comprise SWMU 15.

Date of Startup:

This unit began operation in 1977.

Date of Closure:

This unit is active.

Wastes Managed: This unit manages foundry dust generated when steel parts are shotblasted. This waste is nonhazardous.

Release Controls: The drums that collect the dust are outdoors on concrete. The ducts that transfer the waste from the wheelabrators into the drums are closed.

History of Documented Releases: No releases from this unit have been documented.

Observations: During the VSI, the wheelabrators were operating and were discharging steel shot and particulate matter into the drums. PRC did not photograph this unit because it is similar to the Tool Room Baghouse (SWMU 11) (see Photograph No. 16). PRC did not observe any evidence of release from this unit.

SWMU 16 **Plant 8 and 98 Dust Collectors**

Unit Description: The Dust Collectors in Plants 8 and 98 collect dust generated from in the former foundry area of Plant 8 and the investment casting area of Plant 98. One wheelabrator in the investment castings area discharges dust into a drum. In the past, several wheelabrators in the ductile iron foundry area of Plant 8 discharged dust into drums. Steel shot in the wheelabrators is used to remove excess particulate matter from parts being processed in this machinery. As dust and steel shot exits the wheelabrators, it is transferred by gravity into 55-gallon drums outside the facility.

Date of Startup: These units began operation as early as 1964.

Date of Closure: The dust collector in the investment castings area is active. The dust collectors in the ductile iron foundry area are inactive and have been decommissioned.

Wastes Managed: This unit manages steel shot and excess particulate matter generated when steel parts are shotblasted. This waste is nonhazardous.

Release Controls:	The drums that collect the dust are outdoors on concrete. The ducts that transfers the waste from the wheelabrators into the drums are closed.
History of Documented Releases:	No releases from this unit have been documented.
Observations:	During the VSI, the wheelabrator in the investment castings were not operating. Normally, the dust collector discharges steel shot and particulate matter into a drum that makes up part of the unit. The dust collectors in the ductile iron foundry area were not on site during the VSI. In several locations, dust remained in the tubes that originally connected the wheelabrator to the dust collection drums. Dust had also spilled to the concrete area beneath the tubes at several locations. PRC did not photograph this unit because it is similar to the dust collectors in Plant 17 (SWMU 25) (see Photograph No. 21).
SWMU 17	
Unit Description:	Plant 98 Nonhazardous Waste Dumpster This unit is a 20-cubic-yard steel dumpster on the west end of Plant 98. The facility disposes of nonhazardous wastes generated from Plant 98 operations in this unit.
Date of Startup:	This unit began operation in 1965.
Date of Closure:	This unit is active.
Wastes Managed:	This unit manages various nonhazardous wastes generated from Plant 98 operations, including disposal of cracked investment casting shells.
Release Controls:	This unit is an open-top container on a concrete pad. The pad is sloped towards the center and does not contain floor drains.
History of Documented Releases:	No releases from this unit have been documented.

Observations: During the VSI, this unit was about 75 percent full. The majority of the waste in the unit consisted of cracked investment casting shells (see Photograph No. 31). PRC did not observe any evidence of release from this unit.

SWMU 18

Foundry Sand Pile

Unit Description: This unit is a concrete pad outdoors on the east side of Plant 98 upon which waste foundry sand is placed. The sand pile is situated in a circular area with a diameter of about 30 feet.

Date of Startup: This unit began operation in 1964.

Date of Closure: This unit is active.

Wastes Managed: This unit manages nonhazardous foundry sand.

Release Controls: Foundry sand is placed on a concrete pad that is sloped towards its center. The pad is not drained. The foundry sand is not covered after it is placed in the unit.

History of Documented Releases: No releases from this unit have been documented.

Observations: The Foundry Sand Pile was empty during the VSI. The concrete pad was stained in places and was covered with a thin layer of gray and black foundry sand. Some foundry sand was present on soils near the concrete pad (see Photograph No. 31).

SWMU 19

Plant 98 WTS

Unit Description: The Plant 98 WTS treats wastewaters generated when outboard propellers are finished in a bath of water and stones. The system treats about 3,600 gallons per day in batches and generates approximately two to four 0.5-cubic-yard hoppers of wastewater treatment sludge that is added to the Plant 98 Nonhazardous Waste Dumpster (SWMU 17).

Date of Startup: This unit began operation in 1986.

Date of Closure: This unit is active.

Wastes Managed: This unit manages nonhazardous wastewater and generates nonhazardous WTS sludge.

Release Controls: Wastewater is treated in two fiberglass tanks with capacities of about 500 and 1,000 gallons. The tanks are situated on the facility's concrete floor, which has no floor drains.

History of Documented Releases: No releases from this unit have been documented.

Observations: During the VSI, the unit was operating. One 0.5-cubic-yard hopper beneath the sludge press was partially full. PRC did not observe any evidence of release from the unit (see Photograph No. 32).

SWMU 20 Plant 4 Scrap Metal Storage Area

Unit Description: The Plant 4 Scrap Metal Storage Area is outdoors between Plant 4 and Plant 8. It is a concrete pad with walls that separate it into four discrete areas. Scrap metal from various metal machining operations is placed in the unit, where it is picked up for off-site disposal. Three of the unit's bays slope toward trenches that collect runoff and drain into a 500-gallon tank. The contents of the tank are treated in the Plant 4 WTS (SWMU 23). Scrap aluminum is stored in a 20-cubic-yard trailer. A 2,000-gallon tank beneath the scrap aluminum trailer collects runoff and coolant that drips from scrap aluminum. The contents of the tank are treated in the Plant 4 WTS (SWMU 23).

Date of Startup: PRC estimates that this unit began operation in about 1964.

Date of Closure: This unit is active.

Wastes Managed:	This unit manages nonhazardous scrap metals. The 500-gallon tank collects runoff and coolant drippings from the unit. The 2,000-gallon tank collects runoff and coolant that has dripped from the aluminum trailer.
Release Controls:	This unit is underlain by concrete. The concrete is sloped into trenches that collect runoff and coolants that drip from the scrap metal. The contents of the two tanks are emptied and treated by the Plant 4 WTS (SWMU 23).
History of Documented Releases:	No releases from this unit have been documented.
Observations:	During the VSI, this unit contained scrap metal in all four bays. The scrap aluminum trailer was leaking coolant oil onto the concrete pad, and the oil was flowing into the 2,000-gallon tank beneath the trailer (see Photograph No. 30). PRC did not observe any signs of release to environmental media from this unit.
SWMU 21	
Unit Description:	Plant 4 Hazardous Waste DSA The Plant 4 Hazardous Waste DSA is a marked-off area of the Plant 4 machine shop concrete floor. The area is clearly marked with the words "Hazardous Waste Storage Area." The facility representatives referred to the area as a "satellite waste accumulation area," but the area is not near a point of waste generation. The unit manages spent mineral spirits (D001).
Date of Startup:	This unit began operation in 1983.
Date of Closure:	This unit is active.
Wastes Managed:	This unit manages spent mineral spirits (D001).
Release Controls:	Spent mineral spirits (D001) are stored in a closed, funnelled, 55-gallon drum. The drum is stored on the facility's concrete floor, which has no floor drain.

**History of
Documented Releases:**

No releases from this unit have been documented.

Observations:

During the VSI, one drum was in the unit. PRC did not observe any evidence of release from the unit (see Photograph No. 26).

SWMU 22

Plant 4 Oil/Water Separator

Unit Description:

The Plant 4 Oil/Water Separator is a 3,000-gallon steel tank within a concrete diked area. The unit separates water from used coolants and machining oils. Influent waste is fed from two feed tanks into the separator tank.

Date of Startup:

This unit began operation in 1989.

Date of Closure:

This unit is active.

Wastes Managed:

This unit manages waste coolants. This waste stream is nonhazardous.

Release Controls:

Most of the elevated 3,000-gallon tank is over a concrete brick dike, but both ends of the tank overhang the dike. The floor beneath the tank is concrete. The two feed tanks are in a diked area that has no floor drains.

**History of
Documented Releases:**

No releases from this unit have been documented.

Observations:

During the VSI, the concrete brick dike beneath the 3,000-gallon tank was partially stained. Also, absorbent material was beneath the part of the tank outside the concrete brick dike. PRC did not observe any signs of release to environmental media from this unit (see Photograph No. 27).

SWMU 23

Plant 4 WTS

Unit Description:

The Plant 4 WTS treats rinse water from the Plant 4 tin plating line and collection tanks beneath the Plant 4 Scrap Metal Storage Area

(SWMU 20). Rinsewater is flushed into a 150-gallon concrete sump before it is pumped into the wastewater treatment tanks. Wastewater is treated using pH adjustment, hexavalent chromium reduction, flocculation, and filtration. Sludge is pressed into one 1-cubic-yard metal hopper. When the hopper is full, it is transferred to the Plant 15 Sludge Storage Area (SWMU 13).

Date of Startup:	This unit began operation in 1969.
Date of Closure:	This unit is active.
Wastes Managed:	This unit manages plating rinsewater. The WTS sludge generated by the Plant 4 WTS is hazardous waste (F019).
Release Controls:	The closed tanks that comprise the Plant 4 WTS are indoors over a concrete floor that has no floor drains.
History of Documented Releases:	No releases from this unit have been documented.
Observations:	The sludge hopper was partially full of sludge during the VSI. PRC did not observe any evidence of release (see Photograph No. 29).
SWMU 24	Former Plant 4 WTS Sludge Dumpster
Unit Description:	The Former Plant 4 WTS Sludge Dumpster was located outdoors on the west side of Plant 4. The unit consisted of a 20-cubic-yard dumpster used to accumulate hazardous WTS sludge (F019).
Date of Startup:	The unit began operation about 1969.
Date of Closure:	The unit has been inactive since 1990.
Wastes Managed:	The unit managed hazardous WTS sludge (F019) generated by the Plant 4 WTS (SWMU 23). Waste from this unit was ultimately removed from the facility, rendered nonhazardous, then landfilled by a private contractor.

Release Controls: The unit was a 20-cubic-yard metal dumpster. PRC could not determine if this unit had release controls.

History of Documented Release: No releases from this SWMU have been documented.

Observations: PRC did not observe or photograph the former location of this unit.

SWMU 25 Plant 17 Dust Collectors

Unit Description: The dust collectors in Plant 17 collect dust generated by the diecasting operations. Dust is suctioned out of the plant by cyclones and discharged through closed piping into 55-gallon drums outside the plant or into the Plant 17 Foundry Sand Collection Truck (SWMU 26). When the drums are full, they are emptied into the Plant 17 Nonhazardous Waste Dumpster (SWMU 28).

Date of Startup: The first of these units began operation in 1979.

Date of Closure: This unit is active.

Wastes Managed: This unit manages nonhazardous foundry sand.

Release Controls: The dust collectors are within closed piping and discharge into covered drums outside the facility. The drums are stored on concrete.

History of Documented Releases: No releases from this unit have been documented.

Observations: The areas surrounding the Plant 17 Dust Collectors was clean during the VSI. PRC did not observe any evidence of release (see Photograph No. 21).

SWMU 26**Plant 17 Foundry Sand Collection Truck****Unit Description:**

The Plant 17 Foundry Sand Collection Truck is a 4-cubic-yard dump truck that collects waste foundry sand from Plant 17. Foundry sand collected during the shakedown process is suctioned into a piping system that discharges into the truck. When the truck is full, it is driven to the Foundry Sand Pile (SWMU 18), and its contents are added to the pile.

Date of Startup:

This unit began operation in 1975.

Date of Closure:

This unit is active.

Wastes Managed:

This unit manages nonhazardous foundry sand.

Release Controls:

The dump truck has an open-top containment area with walls on three sides. It is parked on concrete outside the facility.

**History of
Documented Releases:**

No releases from this unit have been documented.

Observations:

During the VSI, foundry sand was falling into the unit from an overhead pipe. The area around the truck was clean and relatively free of foundry sand. PRC did not observe any evidence of release from this unit (see Photograph No. 21).

SWMU 27**Plant 17 Foundry Sand Collection Hoppers****Unit Description:**

The Plant 17 Foundry Sand Collection Hoppers are 1-cubic-yard metal hoppers inside the facility that collect foundry sand generated during the shakedown process. Several hoppers are located in Plant 17. When they are full, they are transported to the Foundry Sand Pile (SWMU 18), where they are emptied.

Date of Startup:

PRC estimates that this unit began operation in 1964.

Date of Closure:

This unit is active.

SWMU 28	Plant 17 Nonhazardous Waste Dumpster
Unit Description:	The Plant 17 Nonhazardous Waste Dumpster is an open-top 20-cubic-yard dumpster outside Plant 17. It collects the facility's nonhazardous waste streams, including waste salt cores and foundry dust from the Plant 17 Dust Collectors (SWMU 25).
Date of Startup:	This unit began operation in 1969.
Date of Closure:	This unit is active.
Wastes Managed:	This unit manages various nonhazardous waste salt cores and foundry dust from Plant 17 operations.
Release Controls:	The dumpster is an open-top container outside the facility on concrete. Cracks in the concrete are apparent near the dumpster.
History of Documented Releases:	No releases from this unit have been documented.
Observations:	During the VSI, the dumpster mostly contained cracked waste salt cores and foundry dust. It also contained some cardboard and other paper wastes. Some salt core material and foundry dust were on the concrete pad beneath the dumpster (see Photograph No. 24).

SWMU 29**Aluminum Dross Cooling Area****Unit Description:**

The Aluminum Dross Cooling Area is located outside Plant 17 on a gravel pad. Open-top 10-cubic-yard dumpsters collect aluminum dross from the aluminum foundry operations in Plant 17. The dross is allowed to cool in this unit. After cooling, the dross is stored in this unit until enough has accumulated to be taken off site and reclaimed.

Date of Startup:

This unit began operation in 1969.

Date of Closure:

This unit is active.

Wastes Managed:

This unit manages nonhazardous aluminum dross.

Release Controls:

The open-top metal dumpster is located outdoors on a gravel pad.

**History of
Documented Releases:**

No releases from this unit have been documented.

Observations:

During the VSI, a pan of aluminum dross had recently been emptied into the Aluminum Dross Cooling Area. Several dross bricks were in the unit. PRC did not observe any signs of release from the unit (see Photograph No. 22).

SWMU 30**Plant 17 Scrap Metal Dumpster****Unit Description:**

The Plant 17 Scrap Metal Dumpster is a 20-cubic-yard, open-top dumpster that stores miscellaneous scrap metal from Plant 17 operations. The unit is located outside Plant 17 on a concrete pad.

Date of Startup:

This unit began operation in 1969.

Date of Closure:

This unit is active.

Wastes Managed:

This unit manages miscellaneous, nonhazardous scrap metal.

Release Controls:	This unit consists of a metal dumpster used to manage nonhazardous waste. The unit is placed on concrete that drains to the FWTP.
History of Documented Releases:	No releases from this unit have been documented.
Observations:	During the VSI, the Plant 17 Scrap Metal Dumpster was partially full of scrap metal. The unit was not photographed because it closely resembles the Plant 15 Scrap Metal Storage Area (SWMU 12) (see Photograph No. 17).
SWMU 31	Plant 17 WTS
Unit Description:	The Plant 17 WTS collects wastewater from the die casters in Plant 17. Coolants and oils from the die casters are channelled through floor trenches into the system. Influent is piped into one of three 5,000-gallon holding tanks. The wastewater undergoes pH adjustment and flocculation to remove solids. The facility treats about 3,000 gallons of wastewater per day in batches. Effluent is discharged to FWTP. Sludge is pressed into 1-cubic-yard sludge hoppers. When the hoppers are full, the sludge is transferred into the Plant 17 WTS Dumpster (SWMU 32).
Date of Startup:	This unit began operation in 1991.
Date of Closure:	This unit is active.
Wastes Managed:	This unit manages nonhazardous process wastewater from Plant 17's die casters. The wastewater contains coolants and oils.
Release Controls:	The Plant 17 WTS consists of closed tanks that are indoors on the facility's concrete floor.
History of Documented Releases:	No releases from this unit have been documented.
Observations:	During the VSI, the unit was operating. One of the two sludge hoppers at the unit was full; the other was being filled. PRC did

not observe any signs of release from the unit (see Photograph No. 25).

SWMU 32

Plant 17 WTS Sludge Dumpster

Unit Description:

The Plant 17 WTS Sludge Dumpster is a covered, 20-cubic-yard dumpster located outside Plant 17 on a concrete pad. The unit stores sludge from the Plant 17 WTS (SWMU 31). When the dumpster is full, it is transported off site for disposal.

Date of Startup:

This unit began operation in 1991.

Date of Closure:

This unit is active.

Wastes Managed:

This unit manages nonhazardous WTS sludge from the Plant 17 WTS. nonhazardous.

Release Controls:

The dumpster is a metal container covered with plastic and a tarpaulin that are secured to the dumpster. The dumpster is located on a concrete pad outside the facility. This area drains via storm sewers to the FWTP.

**History of
Documented Releases:**

No releases from this unit have been documented.

Observations:

During the VSI, the dumpster was securely covered. PRC did not observe any signs of release (see Photograph No. 23).

SWMU 33

Wax Waste Storage Area

Unit Description:

The Wax Waste Storage Area is indoors in Plant 98. The unit is used to manage wax recovered from a lost-wax stainless steel diecasting process. The unit consists of two, open-top tubs with capacities of about 30-gallons used to store waste wax.

Date of Startup:

PRC estimates that this unit began operation in 1964.

Date of Closure:

The unit is active.

Wastes Managed:

The unit manages nonhazardous waste wax in metal containers. This waste is transported off site and recycled by a private contractor.

Release Controls:

The unit consists of two open-top tubs set on a concrete floor.

**History of
Documented Release:**

No releases from this SWMU have been documented.

Observations:

PRC observed this unit, but did not photograph it. The unit contained about 60 pounds of wax. No evidence of release was noted.

4.0 AREAS OF CONCERN

PRC identified one AOC during the PA/VSI. This AOC is discussed below; its location is shown in Figure 2.

AOC 1 Contaminated Soil

During the spring of 1992, the facility was moving a water line in Plant 4. During the excavation, a petroleum odor was detected. The resulting investigation revealed soil contaminated with mineral spirits. Mercury's consultant has not yet released the results of the investigation, so the concentration of mineral spirits in the soil is not known. A facility representative explained that the contaminated soil was removed and ground water at the location was not contaminated. However, WDNR has not reviewed the report or closed the investigation. It is not known how long the mineral spirits have been present (see Photograph No. 28).

5.0 CONCLUSIONS AND RECOMMENDATIONS

The PA/VSI identified 33 SWMUs and no AOCs at the Mercury facility. Background information on the facility's location; operations; waste generation and management; history of documented releases; regulatory history; environmental setting; and receptors is presented in Section 2.0. SWMU-specific information, such as the unit's description, dates of operation, wastes managed, release controls, history of documented releases, and observed condition, is presented in Section 3.0. AOCs are discussed in Section 4.0. Following are PRC's conclusions and recommendations for each SWMU. Table 5, at the end of this section, summarizes the SWMUs and the AOC at the facility, and the recommended further actions.

SWMU 1a, 1b, 1c Spent Solvent SAAs

Conclusions: The potential for release to ground water, surface water, air, and on-site soils is low because this unit is indoors and consists of sealed drums on concrete floors that are undrained.

Recommendations: PRC recommends no further action at this time.

SWMU 2 North Paint Booth WTS

Conclusions: The potential for release to ground water, surface water, air, and on-site soils is low because this unit is indoors on concrete and drains to the Plant 15 WTS (SWMU 4).

Recommendations: PRC recommends no further action at this time.

SWMU 3 Solvent Recovery Still

Conclusions: The potential for release to ground water, surface water, air, and on-site soils is low because this unit is indoors on a concrete floor that drains to a containment trench beneath the floor.

Recommendations: PRC recommends no further action at this time.

SWMU 4 Plant 15 WTS

Conclusions: The potential for release to ground water, surface water, air, and on-site soils is low because this unit manages nonhazardous waste indoors, on a concrete floor with no floor drains. The unit also has overflow alarms.

Recommendations: PRC recommends no further action at this time.

SWMU 5 Frog Ponds

Conclusions: The potential for release to ground water, surface water, air, and on-site soils is low because this unit is indoors and consists of concrete tanks.

Recommendations: PRC recommends no further action at this time.

SWMU 6 Scrap Metal SAA

Conclusions: The potential for release to ground water, surface water, air, and on-site soils is low because this unit manages nonhazardous waste indoors on concrete floors.

Recommendations: PRC recommends no further action at this time.

SWMU 7 Paint Sludge Storage Area

Conclusions: The potential for release to ground water, surface water, air, and on-site soils is low because this unit is indoors on concrete floors that drain to containment tanks. The luggers are lined with plastic and set in bermed areas.

Recommendations: PRC recommends no further action at this time.

SWMU 8 Drum Storage Shed

Conclusions: The potential for release to ground water, surface water, air, and on-site soils is low because this unit is indoors on a concrete floor. Waste is stored in 55-gallon sealed metal drums.

Recommendations: PRC recommends no further action at this time.

SWMU 9 Waste Coolant Storage Area

Conclusions: The potential for release to ground water, surface water, air, and on-site soils is low because this unit manages nonhazardous waste outdoors in sealed 55-gallon drums, outdoors, on a concrete driveway.

Recommendations: PRC recommends no further action at this time.

SWMU 10 Former DSA

Conclusions: The potential for release to ground water, surface water, air, and on-site soils is low because this unit managed waste on a concrete, diked platform and has been inactive since 1986. There was no documentation in the files during the PA/VSI of a formal RCRA closure of this unit.

Recommendations: PRC recommends that a file search be conducted to locate the documentation of the formal RCRA closure of this unit and that soil and groundwater sampling and analysis be considered depending on the results.

SWMU 11 Tool Room Baghouse

Conclusions: The potential for release to ground water, surface water, air, and on-site soils is low because this unit manages nonhazardous waste indoors in sealed 55-gallon drums. Floors around this unit do not have drains.

Recommendations: PRC recommends no further action at this time.

SWMU 12 Plant 15 Scrap Metal Storage Area

Conclusions: The potential for release to ground water, surface water, air, and on-site soils is low because this unit manages nonhazardous waste indoors in open-top metal luggers on a concrete floor that has no drains.

Recommendations: PRC recommends no further action at this time.

SWMU 13 Plant 15 Sludge Storage Area

Conclusions: The potential for release to ground water, surface water, air, and on-site soils is low because this unit manages waste in indoors plastic-lined, metal lugger on a concrete floor that drains into a containment pit.

Recommendations: PRC recommends no further action at this time.

SWMU 14 Paint Sludge SAAs

Conclusions: The potential for release to ground water, surface water, air, and on-site soils is low because this unit manages waste indoors, in sealed 55-gallon drums on a concrete floor.

Recommendations: PRC recommends no further action at this time.

SWMU 15 Plant 4 Dust Collectors

Conclusions: The potential for release to ground water, surface water, air, and on-site soils is low because this unit manages nonhazardous waste in a closed system. The waste is ultimately stored outdoors in 55-gallon drums on concrete.

Recommendations: PRC recommends no further action at this time.

SWMU 16 Plants 8 and 98 Dust Collectors

Conclusions: The past potential for release to ground water, surface water, air, and on-site soils was low because this unit managed nonhazardous waste in a closed system. The waste is ultimately stored outdoors in drums on concrete. The current potential for release is low to moderate. The units that are associated with the former iron foundry have been partially disassembled and were leaking dust onto the concrete during the VSI. This waste could easily run off to soils or become airborne under windy conditions.

Recommendations: PRC recommends no further action at this time.

SWMU 17 Plant 98 Nonhazardous Waste Dumpster

Conclusions: The potential for release to ground water, surface water, air, and on-site soils is low because this unit manages nonhazardous waste in an open-top container on a concrete pad that has no drain.

Recommendations: PRC recommends no further action at this time.

SWMU 18 Foundry Sand Pile

Conclusions: The potential for release to ground water, surface water, and on-site soils is high because this unit manages nonhazardous waste on concrete that drains via sanitary sewers to the FWTP.

The potential for release to air is high. The unit is uncovered and exposed to wind. Under windy conditions this waste may become airborne.

Recommendations: PRC recommends that the facility manage this waste in a covered container.

SWMU 19 Plant 98 WTS

Conclusions: The potential for release to ground water, surface water, air, and on-site soils is low because this unit manages nonhazardous waste in fiberglass tanks on a concrete floor that has no drains.

Recommendations: PRC recommends no further action at this time.

SWMU 20 Plant 4 Scrap Metal Storage Area

Conclusions: The potential for release to ground water, surface water, air, and on-site soils is low because this unit manages nonhazardous scrap metals outdoors, is underlain by concrete, and drains to two containment tanks.

Recommendations: PRC recommends no further action at this time.

SWMU 21 Plant 4 Hazardous Waste DSA

Conclusions: The potential for release to ground water, surface water, air, and on-site soils is low because this unit is a closed, funnelled, 55-gallon drum on a concrete pad that has no drains. The area is clearly marked with the word "Hazardous Waste Storage Area".

Recommendations: PRC recommends no further action at this time.

SWMU 22 Plant 4 Oil/Water Separator

Conclusions: The potential for release to ground water, surface water, air, and on-site soils is low because this unit manages nonhazardous waste in a closed container on a concrete floor that no has drains.

Recommendations: PRC recommends no further action at this time.

SWMU 23 Plant 4 WTS

Conclusions: The potential for release to ground water, surface water, air, and on-site soils is low because this unit is indoors over a concrete floor that has no drain.

Recommendations: PRC recommends no further action at this time.

SWMU 24 Former Plant 4 WTS Sludge Dumpster

Conclusions: The potential for release to ground water, surface water, air, and on-site soils is low to moderate because this unit was outdoors and consisted of a 20-cubic-yard dumpster that stored hazardous WTS sludge (F019). PRC could not determine if this unit was covered, and could not observe the containment dumpster. However, this unit was near the Plant 4 Scrap Metal Storage Area (SWMU 20), which drains to two containment tanks.

Recommendations: PRC recommends no further action at this time.

SWMU 25

Plant 17 Dust Collectors

Conclusions: The potential for release to ground water, surface water, air, and on-site soils is low because this unit manages nonhazardous waste in a closed system and discharges to covered drums stored on concrete.

Recommendations: PRC recommends no further action at this time.

SWMU 26

Plant 17 Foundry Sand Collection Truck

Conclusions: The potential for release to ground water, surface water, air, and on-site soils is low because this unit manages nonhazardous waste outdoors over concrete.

Recommendations: PRC recommends no further action at this time.

SWMU 27

Plant 17 Foundry Sand Collection Hoppers

Conclusions: The potential for release to ground water, surface water, air, and on-site soils is low because this unit manages nonhazardous waste in covered metal containers on a concrete floor.

Recommendations: PRC recommends no further action at this time.

SWMU 28

Plant 17 Nonhazardous Waste Dumpster

Conclusions: The potential for release to ground water, surface water, air and on-site soils is low because this unit manages nonhazardous waste in a open-topped, metal dumpster outdoors over concrete.

Recommendations: PRC recommends no further action at this time.

SWMU 29

Aluminum Dross Cooling Area

Conclusions: The potential for release to ground water, surface water, air and on-site soils is low because this unit manages nonhazardous waste outdoors in an open-top, metal dumpster on a gravel pad.

Recommendations: *PRC recommends no further action at this time.*

SWMU 30 Plant 17 Scrap Metal Dumpster

Conclusions: The potential for release to ground water, surface water, air and on-site soils is low because this unit manages nonhazardous scrap metal and is situated on a concrete pad outside the facility. The Scrap metal will not migrate to environmental media.

Recommendations: *PRC recommends no further action at this time.*

SWMU 31 Plant 17 WTS

Conclusions: The potential for release to ground water, surface water, air and on-site soils is low because this unit manages nonhazardous wastewater in a closed, indoor system, over a concrete floor.

Recommendations: *PRC recommends no further action at this time.*

SWMU 32 Plant 17 Wastewater Treatment Sludge Dumpster

Conclusions: The potential for release to ground water, surface water, air and on-site soils is low because this unit manages nonhazardous sludge in a metal container covered with plastic and a tarpaulin that are secured to the dumpster. The dumpster rests on a concrete pad outside the facility.

Recommendations: *PRC recommends no further action at this time.*

SWMU 33 Wax Waste Storage Area

Conclusions: The potential for release to ground water, surface water, air and on-site soils is low because this unit manages nonhazardous waste indoors in metal containers set on a concrete floor.

Recommendations: *PRC recommends no further action at this time.*

AOC 1

Contaminated Soil

Conclusions:

This AOC is an area beneath Plant 4 where mineral spirits were discovered in soil during an excavation. It is not known how long the mineral spirits had been present or in what concentration. A facility representative explained that, according to analytical results from ground-water sampling, the mineral spirits had not migrated downward, and that the contaminated soil was removed. However, WDNR has not closed their investigation.

Recommendations:

PRC recommends that the facility submit the results of the investigation and resulting remedial actions to WDNR as soon as they become available.

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**TABLE 5
SWMU AND AOC SUMMARY**

<u>SWMU</u>	<u>Dates of Operation</u>	<u>Evidence of Release</u>	<u>Recommended Further Action</u>
1a. Spent Solvent SAA	About 1964 to present	None	No further action
1b. Spent Solvent SAA	About 1964 to present	None	No further action
1c. Spent Solvent SAA	About 1964 to present	None	No further action
2. North Paint Booth WTS	1990 to present	None	No further action
3. Solvent Recovery Still	1988 to present	None	No further action
4. Plant 15 WTS	1990 to present	None	No further action
5. Frog Ponds	1969 to present	None	No further action
6. Scrap Metal SAA	About 1964 to present	None	No further action
7. Paint Sludge Storage Area	1988 to present	None	No further action
8. Drum Storage Shed	1988 to present	None	No further action
9. Waste Coolant Storage Area	1988 to present	None	No further action
10. Former Drum Storage Area	1983 to 1986	None	The facility should pursue formal RCRA closure. Soil and ground-water sampling and analysis should be considered depending on the results
11. Tool Room Baghouse	1990 to present	None	No further action
12. Plant 15 Scrap Metal Storage Area	1989 to present	None	No further action

TABLE 5 (Continued)
SWMU AND AOC SUMMARY

<u>SWMU</u>	<u>Dates of Operation</u>	<u>Evidence of Release</u>	<u>Recommended Further Action</u>
13. Plant 8 and 98 Dust Collectors	1964 to present	None	No further action
14. Plant 15 Sludge Storage Area	1988 to present	None	No further action
15. Paint Sludge SAA	1964 to present	None	No further action
16. Plant 4 Dust Collectors	1977 to present	None	No further action
17. Plant 98 Nonhazardous Waste Dumpster	1965 to present	None	No further action
18. Foundry Sand Pile	1964 to present	None	The facility should manage this waste in a covered container
19. Plant 98 WTS	1986 to present	None	No further action
20. Plant 4 Scrap Metal Storage Area	1964 to present	None	No further action
21. Plant 4 Hazardous Waste DSA	1983 to present	None	No further action.
22. Plant 4 Oil/Water Separator	1989 to 1990	None	No further action
23. Plant 4 WTS	1969 to present	None	No further action
24. Former Plant 4 WTS Sludge Dumpster	1969 to 1990	None	No further action
25. Plant 17 Dust Collectors	1979 to present	None	No further action

TABLE 5 (Continued)
SWMU AND AOC SUMMARY

<u>SWMU</u>	<u>Dates of Operation</u>	<u>Evidence of Release</u>	<u>Recommended Further Action</u>
26. Plant 17 Foundry Sand Collection Truck	1975 to present	None	No further action
27. Plant 17 Sand Collection Hoppers	1964 to present	None	No further action
28. Plant 17 Nonhazardous Waste Dumpster	1969 to present	None	No further action
29. Aluminum Dross Cooling Area	1969 to present	None	No further action
30. Plant 17 Scrap Metal Dumpster	1969 to present	None	No further action
	1964 to present	None	No further action
31. Plant 17 WTS			
32. Plant 17 Wastewater Treatment Sludge Dumpster	1964 to present	None	No further action
33. Wax Waste Storage Area	1964 to present	None	No further action
<u>AOC</u>	<u>Dates of Operation</u>	<u>Evidence of Release</u>	<u>Recommended Further Action</u>
1. Contaminated Soil	Unknown	Yes, unknown date or dates	The facility should submit the results of the investigation and any resulting remedial actions to WDNR as soon as they become available.

REFERENCES

- Brunswick, Inc., Mercury Marine Division (Mercury), 1980a. Notification of Hazardous Waste Activity, U.S. Environmental Protection Agency (EPA) Form 8700-12, August 20.
- Federal Emergency Management Agency (FEMA), 1988. Flood Insurance Rate Map for the City of Fond du Lac, Wisconsin, Panel 135 of 195, Community Panel Number 550131 00135 C, April 5.
- Mercury, 1980b. Part A Permit Application, EPA Form 3510-1 and 3510-3, November 17.
- Mercury, 1983. Hazardous Waste Permit Application, EPA Form 3510-1 and 3510-3, August 22.
- Mercury, 1985. Letter from Tom Baumgartner to Richard O'Hara, Wisconsin Department of Natural Resources (WDNR), On-site contamination, May 17.
- Mercury, 1986a. Letter from Tom Baumgartner to Wendell Wojner, WDNR, Revision of Closure Cost Estimate, February 3, 1986.
- Mercury, 1986b. Letter from Tom Baumgartner to Wendell Wojner, WDNR, Hazardous Waste Storage Feasibility Plan of Operation, February 26.
- Mercury, 1986c. Hazardous Waste Facility Operating License Application, WDNR Form 4430-6, December 18.
- Mercury, 1992. Letter from Tom Baumgartner to Scott Storlid, PRC, September 30.
- U.S. Department of Agriculture (USDA), 1973. Soil Survey of Fond du Lac County, U.S. Government Printing Office, Washington, D.C.
- U.S. Department of Commerce (USDC), 1968. Climatic Atlas of the United States, U.S. Government Printing Office, Washington, D.C.
- U.S. Environmental Protection Agency (EPA), 1988. Letter from Basil G. Constantelos to Tom Baumgartner, Mercury, Hazardous Waste Operating License, September 15.
- U.S. Geological Survey (USGS), 1962. Geology and Ground-Water Resources of Fond du Lac County, U.S. Government Printing Office, Washington, D.C.
- USGS, 1985. 7.5-Minute Fond du Lac Quadrangle Map.
- Wisconsin Department of Natural Resources, 1982. Hazardous Waste Storage Facility Variance Request Inspection, February 10.
- WDNR, 1983a. Letter from Wendell Wojner to Michael C. Garthwaite, Mercury, RCRA compliance, February 10.
- WDNR, 1983b. Interim License, September 12.
- WDNR, 1985a. Memo from Dave Edwards to John Pleuke and Wendell Wojner, WDNR, Leaking Dumpster, January 4.
- WDNR, 1985b. Letter from Wendell Wojner to Tom Baumgartner, Mercury, RCRA Compliance Inspection Conducted on April 3, 1985, April 25.

WDNR, 1985c. Letter from Wendell Wojner to Tom Baumgartner, Mercury, Site visit held on August 12, 1985, August 23.

WDNR, 1986. Hazardous Waste Compliance Monitoring and Enforcement Summary, November 11.

WDNR, 1988a. Letter from Dave Edwards to Tom Baumgartner, Mercury, RCRA Compliance Inspection conducted on April 29, 1988, July 14.

WDNR, 1988b. Hazardous Waste Facility Operation License, September 15.

WDNR, 1992. Telephone Conversation between Linda Weese and Ken Valder, PRC, September 23.

ATTACHMENT A
VISUAL SITE INSPECTION SUMMARY AND PHOTOGRAPHS

JUNE 15, 1992

MARCUY - MARINE

FORD DR LAC, WISCONSIN

0915 Arrive on-site meet with sig

in at guard shack

0930 Meet Tim Baumgartner,

Steve McInane, Marcus Marine

Dana Edwards, WDRR

Ken Valen Scott Stride, PRC

Explain the purpose of the

PA/VSI, outline process

0940 Begin questioning the facility

maps

Major part of facility installed

in 1963 to 1965, but some

of the operations began as early

as 1940s when house added

in 1967.

Plant 15 used to be a stock area,

assembly. It is now used for

production of all parts (Machina

plant structure)

Plant 4 produces drive shafts,

gas shafts, etc. (Steel plant).

In the past, all steel machining

Plant 4

Plant 17 all aluminum - die cast

gaskets, smelting, simple

machining

Heat Treat Facility (Part of Plant 4)
Used to have Plant 8 (Iron
Foundry - closed in Dec. 1991).
Also investment casting for Al
propellers

In Plant 4, 2 irrigating (chromate
conversion process), 2 anodizers. Both
systems recently shut down. Tin plating
brought a line in late 1991.

Anodizers → chrome wastes. Copper
plating line was removed. Was
contaminated, shipped out. All
plating ~~sludge~~^{KH} wastewaters went
into Plant 4 wastewater treatment
system. Sludge was F019. Sludge
fell into 2 gal³ hoppers. Put into
lumber boxes (10 gal³). Stored in NW
corner of Plant 4 outside.

Other Plant 4 wastewaters: Solvents
(mineral spirits in particular).
A SAA stores TCE from degreasing
used in heat treat process. This
was all removed (TCE process).
A few Safety-Kleen parts washers
generate mineral spirits.

Plant 98: Lost wax process for
investment casting. Generates
ceramic material, wax → solid wastes.
Stainless steel is remelted. Some
silica sand also generated. Freon
and TCE were used in degreasing.
All freon was shipped off-site by 5-31-92.
Current cleaner is a water-based
cleanser. Casting sand was put
in a fill area in 1950s to Dec '91.

Plant 17 (Die cast grinding

flms captured in baghouse

(drums) A WUTS generates

sludge from a filter press

Emulsion-breaking, metal CH

precipitation in batch processes.

also oxidized. All Dross also

generated, not shipped as waste.

An oily (AC) scrap is also

shipped off-site. Both dross

and oily scrap are nonrecycled.

Plant 15: WUTS generates F019

waste from chromate conversion system.

2 paint systems also use chromate.

based primers; ~~the painted materials~~ (Stent in chromate) CH

Washed for Cd-plating parts is

swiping it out also to WUTS

WUTS has 2 main batteries

high-chrome and low-chrome.

Water wash spray booth water is

dumped into line periodically.

A report of all products was filed

with the Santa Clara Regional

(EPA - WH - 552) in D.C.

A sample of paint dross generated

from waste (top - coat black, WH,

and prime, F007 for CR) A 5th

in the next paint booth area

generates F003, F005 still bottoms

Waste paint of thinner are also collected

(F003, F005). Several 5-K mixed

spirits tanks. Some thinner are

in painting (F003 F005) also generated

A 100-drum TSD facility is east of Plant 15. Wastes removed every 30-60 days or so.

RFD facility generates some wastewaters (to sanitary sewer); some solvents (maybe 10-15 gal per year)

Facility has metal molding & die cast permits to POTW. Stormwater permits have been added to permit applic. for WPDES. No on-site wells. Some temporary wells were installed when Plant 15 WOTS was retrofitted.

There have been some LUST incidents. City water supplies facility water, 12 municipal wells.

26 acres, about 2500-3000 employees, currently roughly 2700 employees. About 2 M D total.

10 45 Begin tour.

Below spray booths; 2 tanks are recirculating tanks → capture paint water. Separate collection/dewatering area elsewhere. Solids are skimmed off of the recirculating tanks. Some primer waste that has been skimmed off is stored near the tanks.

1056 PIC 1. S. Paint Skimming
Solid black milk; open top

2 deer, settle hay, n-hy
 St-dye. Study goes to 4th
 pass. Press is behind the

850-yd steel tank. After happens
 an bull (every day), way in
 next to 750. 1/2 yd happens

Every 2-3 mos, all water is
 dumped to other tanks in
 cutting seed.

1101 PIC 2 W. Classifier in background

Still is in paint room. Lines
 up, then flush into a satellite
 air-hand leads the still.

Reaction goes into a jet near the
 still. Flow is towards
 collect stills. Contact hands,

2-pint epoxy paint waiting.
 Material graded floor to tank

1107 PIC 3 N. View of Still Fields

are in at side (barrels)
 Alkalies with paint / Hume
 F003/F015

Masters C part spray booth
 when you are closed, you
 you always goes into the
 drums downstairs

Swampy for exhaust system
 stand in a air behind me &
 the barrels

1114 PIC 4 S

Washers (4 stages) for pots
Treated concrete floor → all
washwater goes to WWTs.

Main WWTs Cr⁶⁺ neutralizer,
pH adjustment, flocculation,
Other side → pH adjusted,
floor, clarifier. Sludge
considered big → happens go
out to TSD facility every
day

1122 PIC 5 W. Sludge happens
from WWTs

Plastic and finishing area →
fiberglass dust generated here.
Its messy. Ratchet not taken
due to tight area

"Frog pads" hold panes
for plastics - washwater

Again, sludge is taken to

scrapped up and put into

open-top barrels. Two

drums hold waste paint thinner

piped in from above

1131 PIC 6 N Thinner drums

PIC 7 W Sludge bleed first

unit. (No flash)

Sludge thinner also will be below

Powder paint like Barn is

collecting with thinner for

late when guns cleaned. Our

steel floor of powder sinker

to still room.

1138 PIC 8 N

Water wash from above
goes to a settler; 200-gal
lot that is transported to ^{North} Part
~~basin~~ ^{line} for dewatering. Water
to WWTs.

Al. block machining area

2 Henry machines separate

Al. from liquids Al. Resinances,

Incr takes the al.

1146 PIC 9 S. View of one of the
collection points for one of the
Henry machines. The coolant
flows by gravity to Henry
machines.

Chromate conversion processing
unit (EDP system). Overflow

rinse water is monitored →

sanitary sewer. Baths, dips etc.

go to either Cr or non-Cr

dip tanks @ WWTs.

1155 PIC 10 N View of one of

the east line grinding/tumbling
machining dust areas

HW Sludge Storage Area goes
to MDE; includes primer
sludge.

Waste Mgt takes solid waste
sludge to Green Lake landfill.

Both areas are set in a
 berm, graded to spill collection
 tanks. Hoppers are lined
 w/ plastic.
 near loading dock

1214 PIC 15E (14 dwd)
 HUDSA in bagged

PIC 12E (Coal dust also
 shown here)

Folia w/ dust sludge in roll-off
 lined w/ plastic. Other
 roll-offs contain iron, steel
 granules (Saddle Iron & metal
 to - find the loc). All aluminum
 goes to Aluminum Resources.

89 Drums currently stored in
 HUDSA. F001F002, F003, F005,
 D001. NE half of baggy stores
 the waste; other part stores large
 metal sh.

Metal granules in top room
 are collected in a dust collector

1210 PIC 13 NE

PIC 14 E

1224 PIC 16 N (Dust collector)
 PIC 17 E (waste)

PIC 18 E (Fog sludge)

125-70°F, 5 winds, drizzling
 overcast

160

122A PIC 19 NLO Al scrap hupper

"Contaminated" Al chips are
separated from pure clean Al
chips

Printing areas use a cleanup
solvent, but no waste is generated

1240 Break for lunch

INDEX OF CURVE AND REDUCTION TABLES

Table I—SLOPE STAKE

Table II—STADIA CORRECTION AND HORIZONTAL DISTANCES

Table III—TRIGONOMETRIC FORMULAE

Table IV—NATURAL TRIGONOMETRICAL FUNCTIONS

CURVE FORMULAE

Table V—TANGENTS AND EXTERNALS TO A 1° CURVE

USEFUL RELATIONS

Table VI—INCHES TO DECIMALS OF A FOOT

Table VII—MINUTES IN DECIMALS OF A DEGREE

Table VIII—MIDDLE ORDINATES OF RAILS

Table IX—SHORT RADIUS CURVES

Table X—RODS IN FEET, 10THS AND 100THS OF FEET

Table XI—LINKS IN FEET, 10THS AND 100THS OF FEET

JUNE 15, 1992

MERCURY - MARINE

FOOD DE CAT, WJ (CONT)

WLD 073 830 028

1330 Arrive on site after lunch break!

Plant 17

4 gal-binned AL smelters, 1 gal.
uses last styrene pieces. Sand/
styrene molds. Sand for new
molds, styrene evap. Which sand is
avoid styrene. All poured into
molds, styrene evap. Which sand is
collected outside, take to factory
sand pit, take off site as solid
waste. Grates/meshes on fully
recycled; sand is stockpiled in 4
hoppers

1330 PIC 20 SW Sand hoppers

There are 13 dust collectors.

Dust added to n.h. water stream

Valley Trail Loc. 11

1342 Pic 23 W LTS hyper

Salt caves! Lagshore dirt stored

in waste dumpsite near facility

1333 Pic 21 S. Dust collectors, truck w/

ldy. sand

Primary ~~Red~~ / ~~black~~ / ~~grey~~ area. All is

crushed, dried, milled off a purchase.

All dross is waste byproduct. Dross

placed in steel containers. 3 per day.

1 per shift. About 150. WD # 1000

month dross; put in dross pans, cooled

off; placed in roll-off. Take off size.

Tested 1. OK using rotating salt

process. About 80% returned as

usable input.

1340 Pic 22 W. View of dross hyper.

Salt process is proprietary. Set

dross are found, put into dross

metal cast moulds. About 50 in

casters, coolers, a/s, all traveling

into WTS

1400 Dia washer, water wash w/ detergent
 Tank capacity $\approx 2,500$ gal. Water
 sludge has been tested; it's not heavy
 Added to n-h waste stream

Steel grinding waste is collected

in hopper (like a port across street)

Steel turnings are segregated for
 grinding, re-use

Wastewater is piped into 30,000 gal
 holding tank. Auto WTS, pH adjust.
 Pumps Treat about 3,000 gal per
 batch, about 1 per day

Key waste SAP; marked off area in
 floor of drum inside, sealed w/
 grease. This is cleanup solvent.

1356 PIC 25 N View of 2 all tanks
 While is clean water, tank is sludgy
 press is up front

New roll of film
 1412 PIC 26 S

Some dust collectors \rightarrow grinding
 fines; disposed of as solids

Oil/lubricant separator is 3,000-gal
 Tank, burned area, 2 fuel separator
 tanks just outside. The water is

Separated. later → sanitizing. W1 →
Sefeltz-Klein.

1417 PIC 27 NE

1416 PIC 28 N. Soil had petroleum
odor when facility relocated a
water line.

The plating line; wastewater is sampled
for plating area into WTS 150 gal
Sump; collects rainwater, oil adjust;
Cr⁶⁺ reduction; floor; filtering; when

Sludge Bumpets 12 full; it is

moved to Plot 15 across the

street; Pishus are tin-plated

1423 PIC 29 S. View of WTS

Sludge dumpsite.

Storm sewers between plots lead
to sanitizing areas

Scrap metal storage area. In

All can is a 240-gal tank that

catches dripping coolant → to

sprayer; inside SW goes to a

collects runoff out of area.

1430 PIC 30 S. SW goes to a

to the logs

To East is burner, a welding

company, heaters

1433 Plot 98; old gray/black iron

ldg. Dismantled in Dec 1991.

Plot 9 it was gray/black iron

ldg. Other part is thick-walled casting.

hardest casting \rightarrow prod. stickless

seed castings using lost wax process; about 25% of the wax is recovered

Invest. Rum! slurry is compressed

of fused silica sand; 20% rum

flow, colloidal binder system

(wax-based)

Wax bleed at entry chamber,

into waste, water bath. Prior to

the casting, used for to the de-

wax

Secondary castings include covers.

ground silica; same colloidal

has some of the casting shells

material

The Idj sand pit was about

Pressurized brick-clay mugs de-

wax w/ston @ about 110 psi

Yates Mfg. recommends the wax that

can be reused. It's poured

from the autoclave rack into

a open-topped drums. White Mgt.

picks up the waste wax

Shell is hand-poured into the

shells. Shell cracks off, swept

up into dumpers White Mgt.

picks up

One dust collect for White Mgt.

30' across max. On concrete pad,
sloped into middle.

Generators 2-4 $\frac{1}{2}$ yd³ heppers
of sludge per day. Solid waste

Fly sand is piled outdoors; all over
ground outdoors. Some wheelabrator
dust remains.

1508 PIC 32 E. View of sludge hepper
(foreground) & treatment tank (background)
Picture angled to avoid proprietary
info.

Finishing area (props). Fines
collected in heppers beneath the
machinery.

Plant 98 - Heat Treatment. Fine
steel shot used in wheelabrators →
Solid waste. Some punch - its
Hardening the parts (insets).

All cutting oils transported to
Plant 4, where they are picked
up by Safety-Kleen.

A degreaser was formerly located
in this area. No storage. Placed
in drums; moved to DSAE TSD
in Plant 15.

Final finishing → stones lubricated
w/ water, blader dragged through
stones. A small WTS treats
about 3,600 yd³ in batch.

9 wheelabrators

Formerly used chromic acid tanks
taken out of service in 1960s, as
early 1970s

Private residences, Prairie, Minnesota

Welding Co - East

Byrum Tank - North

Highway 41, north - West

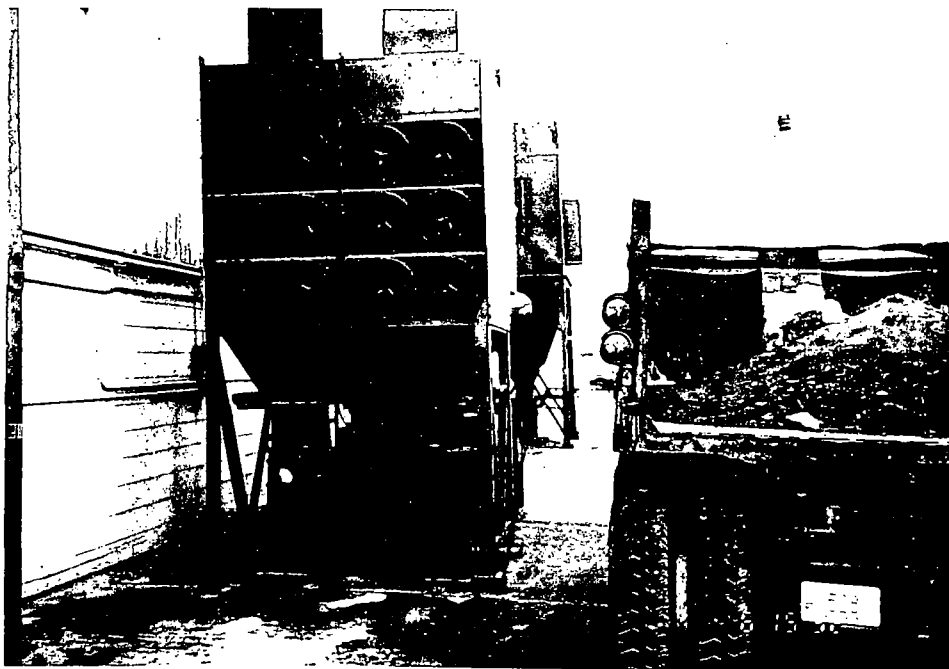
IP Co, 41 - South

Old DSA was also located, it was

near gravel shed by DSA

1535 leave facility





Photograph No. 21

Orientation: South

Description: This photograph shows the Plant 17 Dust Collectors and the Plant 17 Foundry Sand Collection Truck.

Location: Plant 17; SWMUs 25 and 26

Date: June 15, 1992



Photograph No. 22

Orientation: West

Description: This photograph shows the Aluminum Dross Cooling Area.

Location: Plant 17; SWMU 29

Date: June 15, 1992



Photograph No. 23

Orientation: West

Description: This photograph shows the Plant 17 WTS Sludge Dumpster.

Location: Plant 17; SWMU 32

Date: June 15, 1992



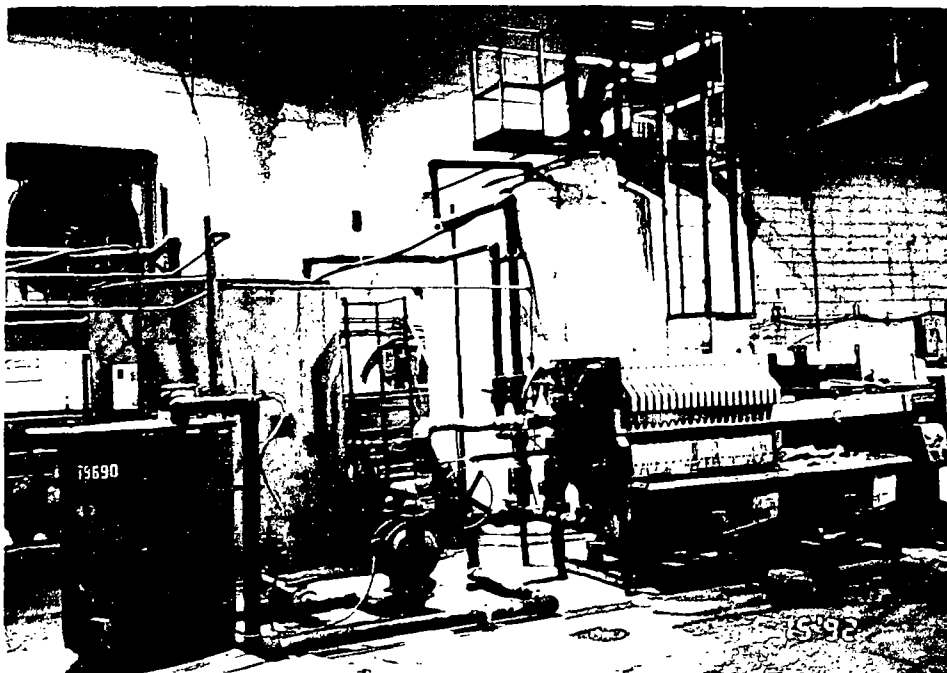
Photograph No. 24

Orientation: North

Description: This photograph shows the Plant 17 Nonhazardous Waste Dumpster.

Location: Plant 17; SWMU 28

Date: June 15, 1992



Photograph No. 25
 Orientation: North
 Description: This photograph shows the Plant 17 WTS.

Location: Plant 17; SWMU 31
 Date: June 15, 1992



Photograph No. 26
 Orientation: South
 Description: This photograph shows the Plant 4 Hazardous Waste DSA.

Location: Plant 4; SWMU 21
 Date: June 15, 1992



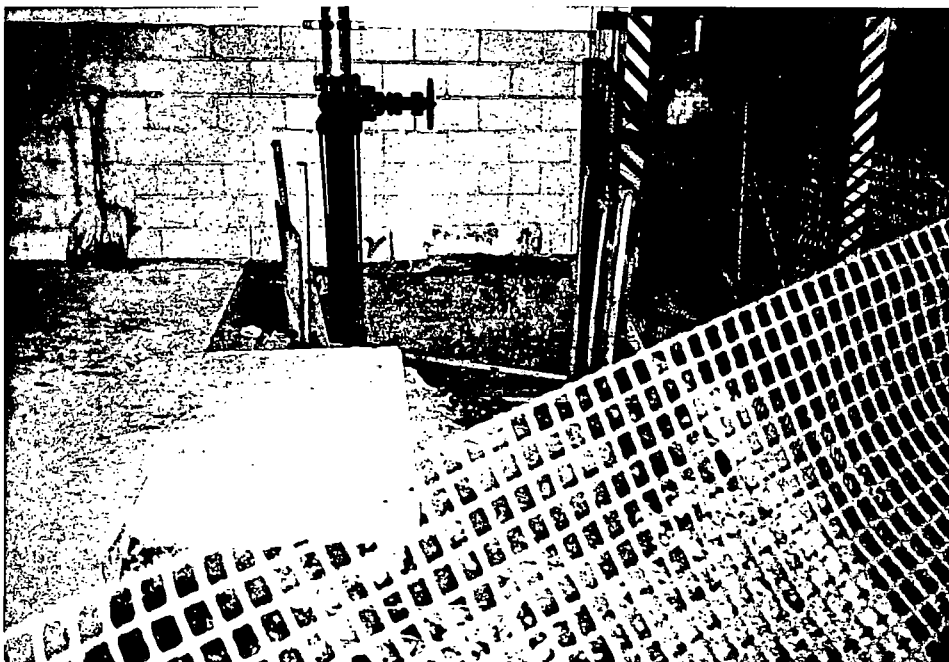
Photograph No. 27

Orientation: Northeast

Location: Plant 4; SWMU 22

Date: June 15, 1992

Description: This photograph shows the Plant 4 Oil/Water Separator.



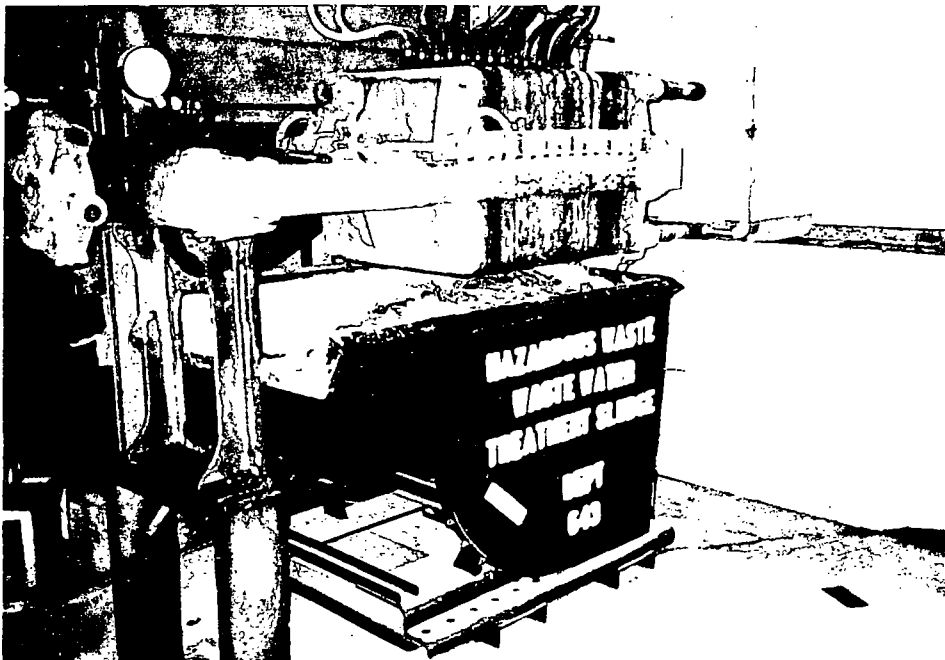
Photograph No. 28

Orientation: North

Location: AOC 1

Date: June 15, 1992

Description: This photograph shows the excavation in Plant 4 where mineral spirits Contaminated Soil was discovered. The facility has investigated this area but the final report has not been reviewed by WDNR.



Photograph No. 29
 Orientation: South
 Description: This photograph shows the Plant 4 WTS.

Location: Plant 4; SWMU 23
 Date: June 15, 1992



Photograph No. 30
 Orientation: South
 Description: This photograph shows the Plant 4 Scrap Metal Storage Area.

Location: Outside Plant 4, SWMU 20
 Date: June 15, 1992



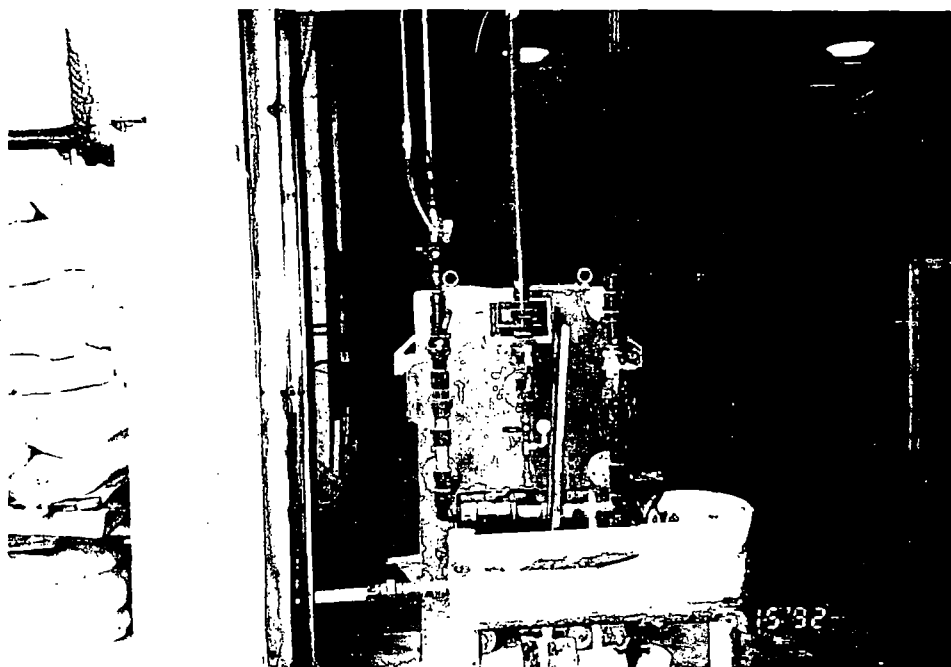
Photograph No. 31

Location: Outside Plant 98; SWMUs 17 and 18

Orientation: East

Date: June 15, 1992

Description: This photograph shows the Plant 98 Nonhazardous Waste Dumpster in the background and the Foundry Sand Pile in the foreground.



Photograph No. 32

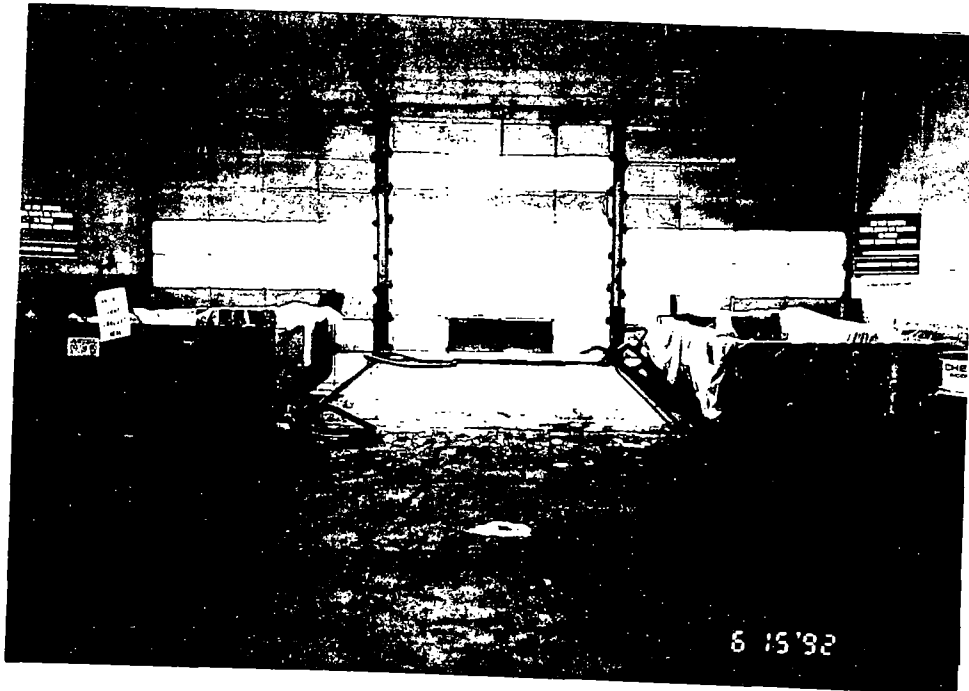
Location: Outside Plant 98; SWMU 19

Orientation: East

Date: June 15, 1992

Description: This photograph shows the Plant 98 WTS.

ATTACHMENT B
VISUAL SITE INSPECTION FIELD NOTES



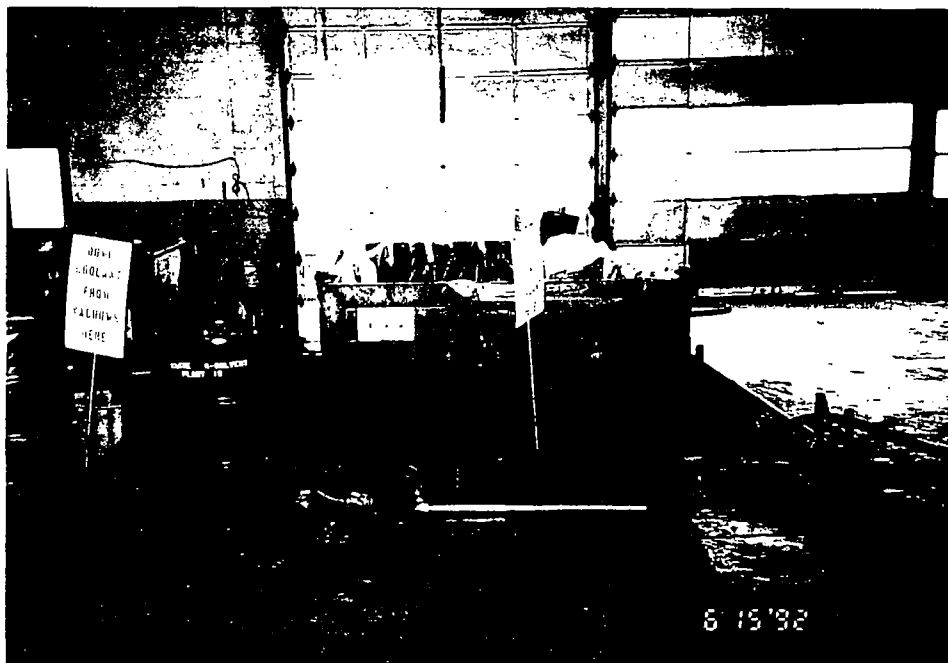
Photograph No. 11

Location: Plant 15; SWMU 7

Orientation: East

Date: June 15, 1992

Description: This photograph shows the Paint Sludge Storage Area.



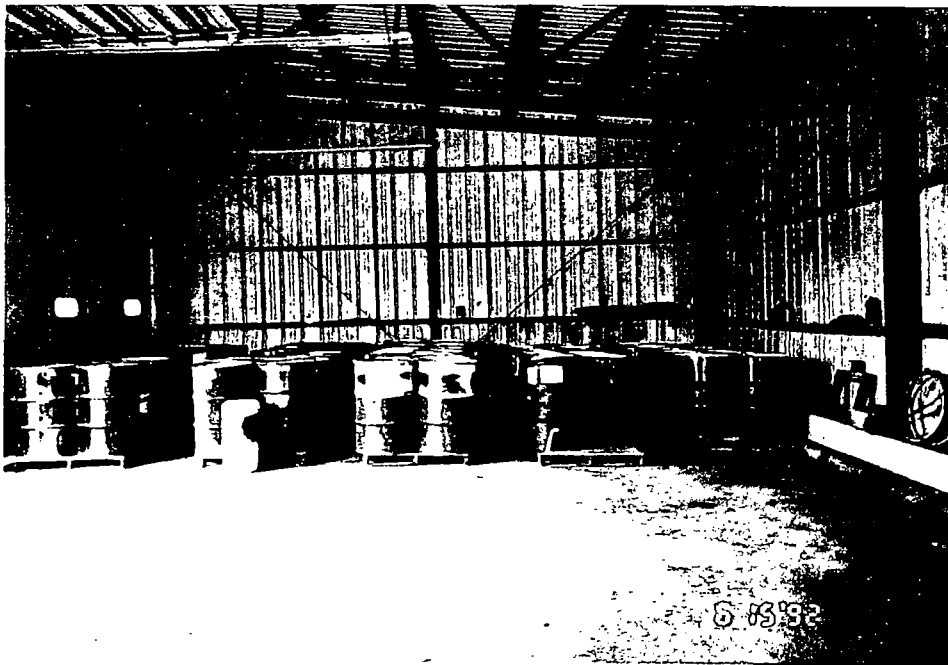
Photograph No. 12

Location: Plant 15; SWMU 7

Orientation: East

Date: June 15, 1992

Description: This photograph shows the Paint Sludge Storage Area.



Photograph No. 13
 Orientation: Northeast
 Description: This photograph shows the Drum Storage Shed.

Location: Plant 15; SWMU 8
 Date: June 15, 1992



Photograph No. 14
 Orientation: East
 Description: This photograph shows the Drum Storage Shed.

Location: Plant 15; SWMU 8
 Date: June 15, 1992



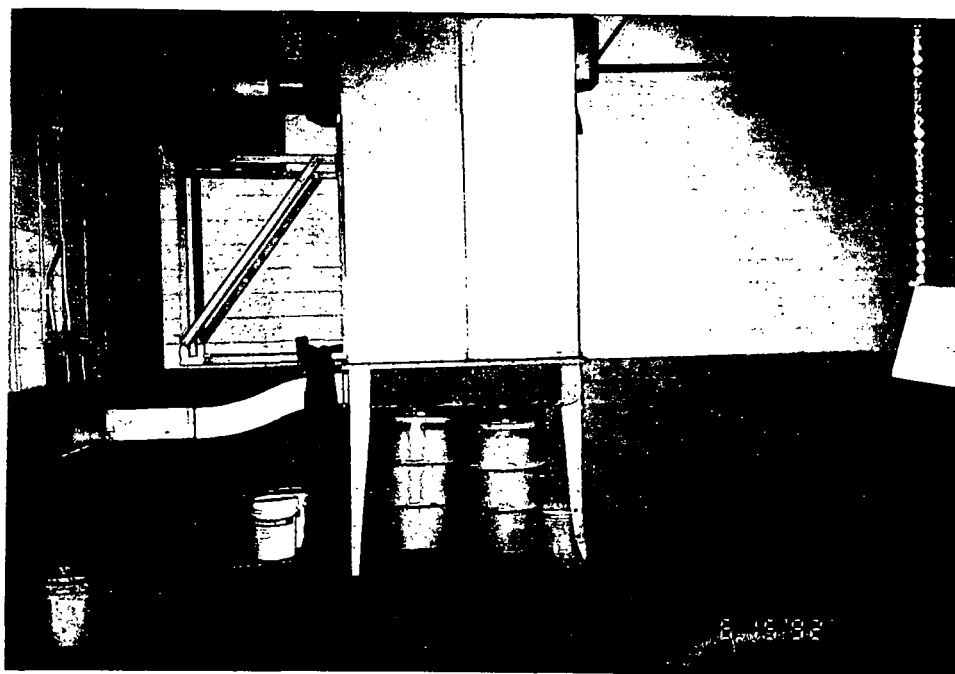
Photograph No. 15

Location: Plant 15; SWMUs 9 and 10

Orientation: East

Date: June 15, 1992

Description: This photograph shows the Waste Coolant Storage Area and the site of the Former DSA.



Photograph No. 16

Location: Plant 15; SWMU 11

Orientation: North

Date: June 15, 1992

Description: This photograph shows the Tool Room Baghouse.



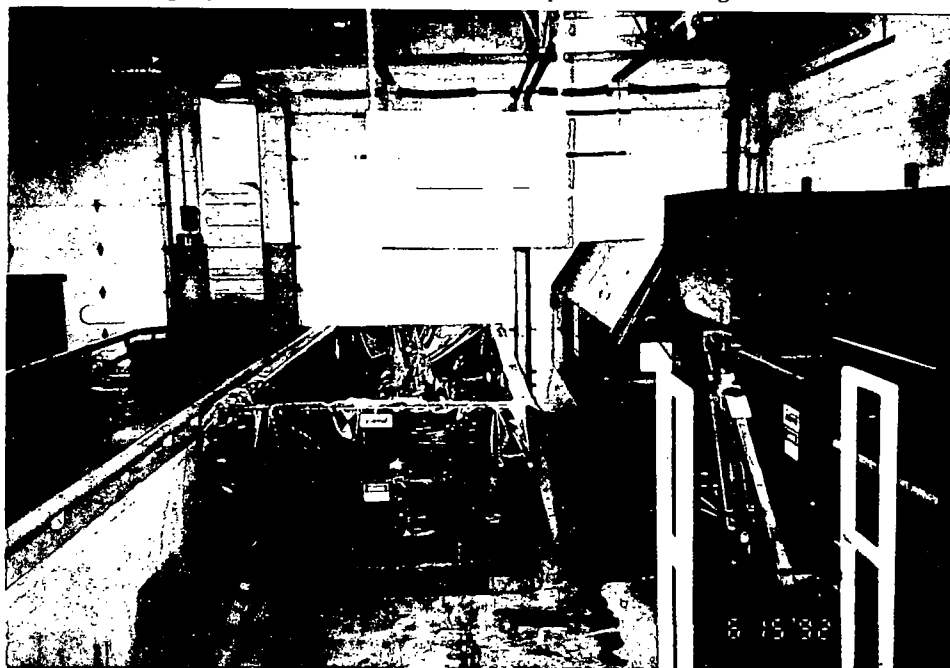
Photograph No. 17

Location: Plant 15; SWMU 12

Orientation: East

Date: June 15, 1992

Description: This photograph shows the Plant 15 Scrap Metal Storage Area.



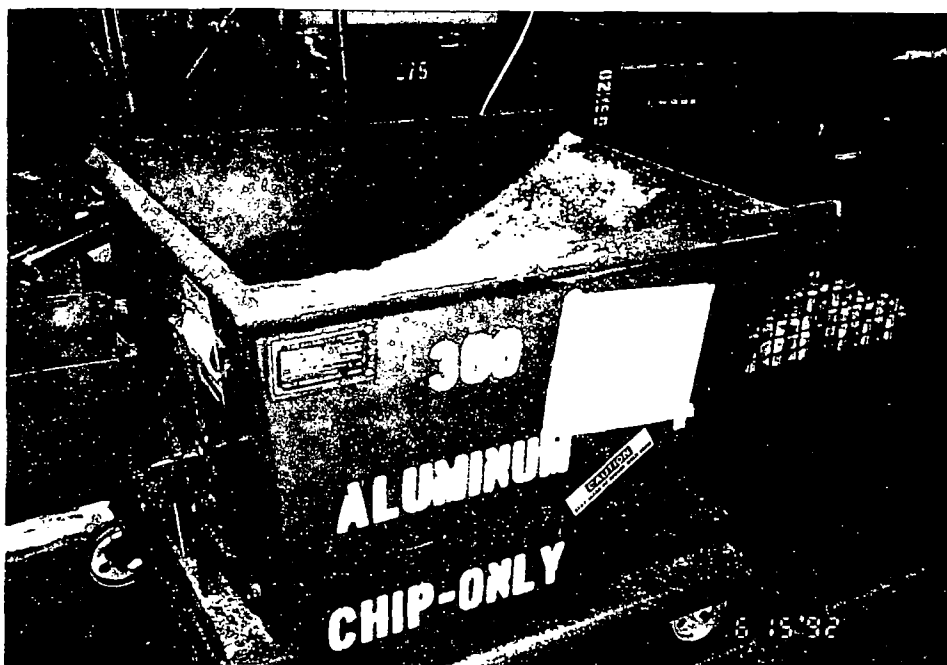
Photograph No. 18

Location: Plant 15; SWMU 13

Orientation: East

Date: June 15, 1992

Description: This photograph shows the Plant 15 Sludge Storage Area.



Photograph No. 19
 Orientation: Northwest
 Description: This photograph shows one of the Scrap Metal SAA.

Location: Plant 15; SWMU 6
 Date: June 15, 1992



Photograph No. 20
 Orientation: Southwest
 Description: This photograph shows one of the Plant 17 Foundry Sand Collection Hoppers.

Location: Plant 17; SWMU 27
 Date: June 15, 1992

VISUAL SITE INSPECTION SUMMARY

Brunswick, Inc.
Mercury Marine Division
W6250 Pioneer Road
Fond Du Lac, WI 54935-1939
WID 073 830 028

Date: June 15, 1992

Primary Facility Representative: Tom Baumgartner, Director of Safety and Environmental Compliance, Brunswick, Inc., Mercury Marine Division (Mercury)

Representative Telephone No.: (414) 929-5379

Additional Facility Representative: Steve Mlinaz, Mercury

Inspection Team: Scott Storlid, PRC Environmental Management, Inc. (PRC)
Ken Valder, PRC
Dave Edwards, Hazardous Waste Specialist, Wisconsin Department of Natural Resources (WDNR)

Photographer: Ken Valder, PRC

Weather Conditions: Overcast; 65° F; winds from the south at 10 - 15 miles per hour.

Summary of Activities: The visual site inspection (VSI) began at 9:15 a.m. with an introductory meeting. The inspection team explained the purpose of the VSI and the agenda for the visit. Facility representatives then discussed the facility's past and current operations, solid wastes generated, and release history. Facility representatives provided the inspection team with copies of requested documents.

The VSI tour began at 10:45 a.m. in Plant 15 where the inspection team observed the Spent Solvent Satellite Accumulation Areas (SAA) (SWMUs 1a, 1b, and 1c); North Paint Booth Wastewater Treatment System (WTS) (SWMU 2); Solvent Recovery Still (SWMU 3); Plant 15 WTS (SWMU 4); Frog Ponds (SWMU 5); Scrap Metal SAAs (SWMU 6); Paint Sludge Storage Area (SWMU 7); Drum Storage Shed (SWMU 8); Waste Coolant Storage Area (SWMU 9); Tool Room Baghouse (SWMU 11); Plant 15 Sludge Storage Area (SWMU 13); Plant 15 Scrap Metal Storage Area (SWMU 12); and Paint Sludge SAAs (SWMU 14).

The inspection team then moved to Plant 17 where we observed the Plant 17 Dust Collectors (SWMU 25); Plant 17 Foundry Sand Collection Truck (SWMU 26); Plant 17 Foundry Sand Collection Hoppers (SWMU 27); Plant 17 Nonhazardous Waste Dumpster (SWMU 28); Aluminum Dross Cooling Area (SWMU 29); Plant 17 Scrap Metal Dumpster (SWMU 30); Plant 17 WTS (SWMU 31); and Plant 17 WTS Sludge Dumpster (SWMU 32).

The inspection team then moved to Plant 4, where the team viewed the Plant 4 Dust Collectors (SWMU 15); Plant 4 Hazardous Waste DSA (SWMU 21); Plant 4 Oil/Water Separator (SWMU 22); the excavation that revealed mineral spirits Contaminated Soil (AOC 1); Plant 4 WTS (SWMU 23); Plant 4 Scrap Metal Storage Area (SWMU 20); and the Former Plant 4 WTS Sludge Dumpster (SWMU 24).

The inspection team then moved to Plant 8, the Former Ductile and Gray Iron Foundry, where we viewed the Plants 8 and 98 Dust Collectors (SWMU 16); and Foundry Sand Pile (SWMU 18).

The Inspection team then moved to Plant 98 where we viewed the Plants 8 and 98 Dust Collectors (SWMU 16); Plant 98 Nonhazardous Waste Dumpster (SWMU 17); Wax Waste Storage Area (SWMU 33); and the Plant 98 WTS (SWMU 19).

The inspection was completed, and PRC left the site at 3:42 p.m.



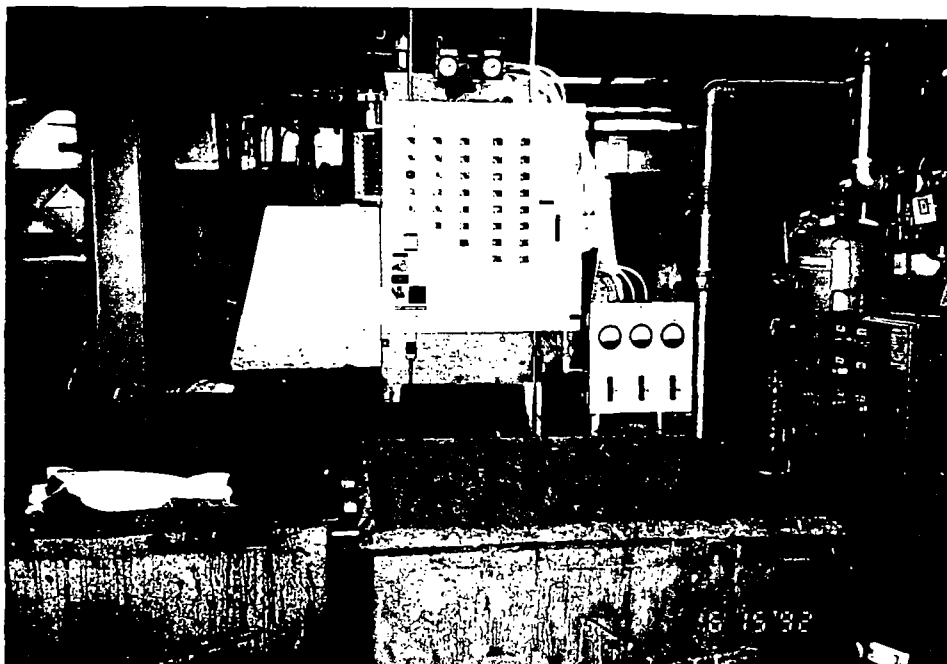
Photograph No. 1

Orientation: South

Description: This photograph shows one of the Paint Sludge SAAs.

Location: Plant 15; SWMU 14

Date: June 15, 1992



Photograph No. 2

Orientation: West

Description: This photograph shows the North Paint Booth WTS.

Location: Plant 15; SWMU 2

Date: June 15, 1992



Photograph No. 3

Orientation: North

Location: Plant 15; SWMUs 1a and 3

Date: June 15, 1992

Description: This photograph shows one of the Spent Solvent SAAs along the left wall and the Solvent Recovery Still (SWMU 3) along the back wall.



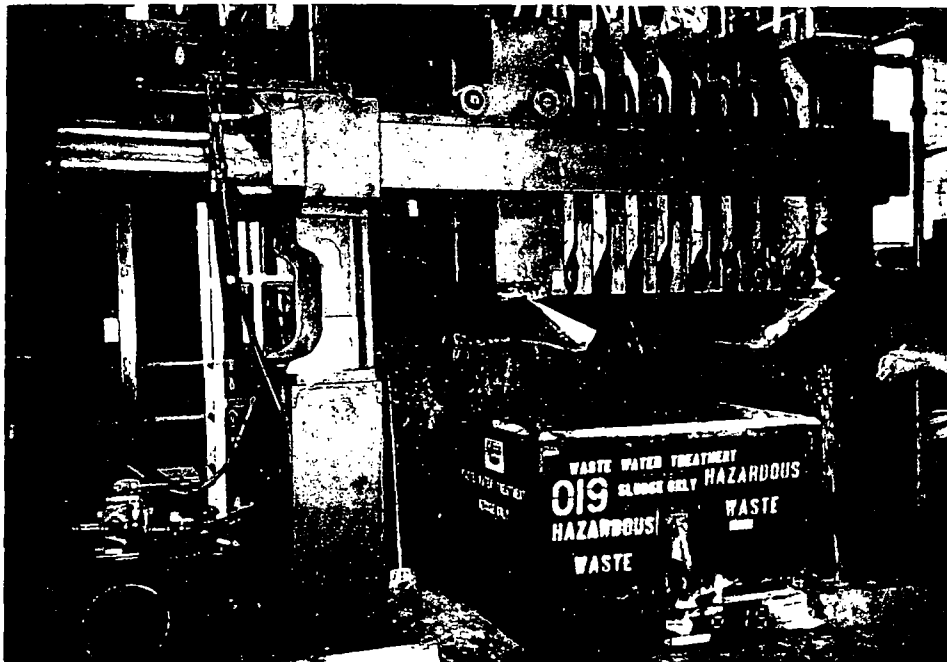
Photograph No. 4

Orientation: South

Location: Plant 15; SWMU 14

Date: June 15, 1992

Description: This photograph shows one of the Paint Sludge SAAs.



Photograph No. 5

Orientation: West

Description: This photograph shows the Plant 15 WTS sludge hopper.

Location: Plant 15; SWMU 4

Date: June 15, 1992



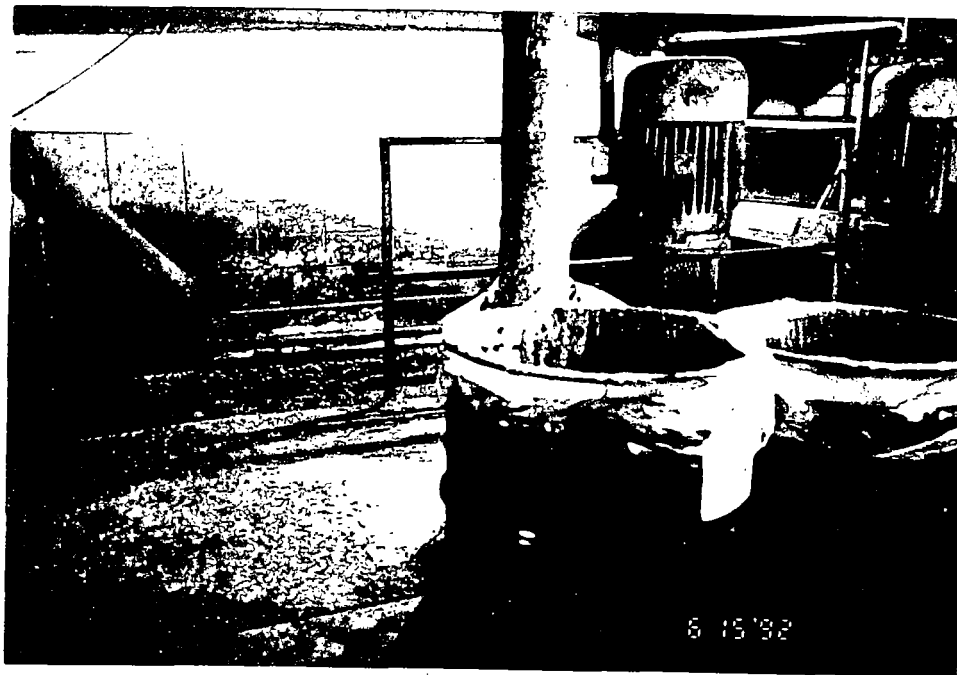
Photograph No. 6

Orientation: North

Description: This photograph shows one of the Spent Solvent SAAs.

Location: Plant 15; SWMU 1b

Date: June 15, 1992



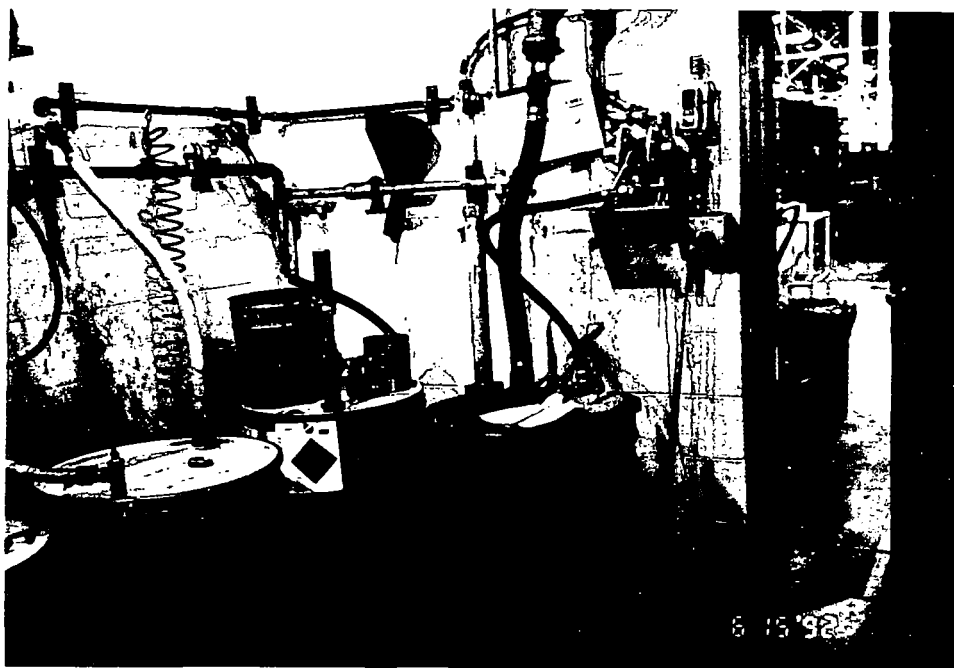
Photograph No. 7

Orientation: West

Description: This photograph shows the Frog Ponds along the back wall and one of the Paint Sludge SAAs (SWMU 14) in the foreground.

Location: Plant 15; SWMU 5 and 14

Date: June 15, 1992



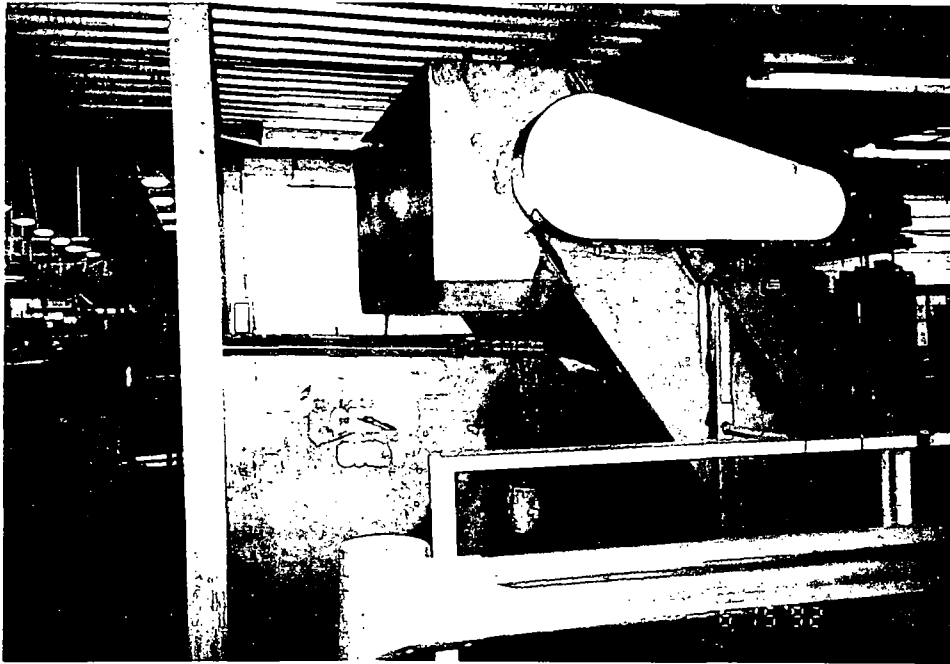
Photograph No. 8

Orientation: North

Description: This photograph shows one of the Spent Solvent SAAs.

Location: Plant 15; SWMU 1

Date: June 15, 1992



Photograph No. 9
Orientation: South

Location: Plant 15; SWMU 6
Date: June 15, 1992

Description: This photograph shows one of the Scrap Metal SAAs.



Photograph No. 10
Orientation: North

Location: Plant 15; SWMU 6
Date: June 15, 1992

Description: This photograph shows one of the Scrap Metal SAAs.